Installation, Operation and Service Manual

Convenience Series

YA850i & YA1700i

Integral YARRA Vertical Merchandisers

MAN0473 Rev. 1.1 Dec. 2010 edition

SKOPE® Refrigeration

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1 SPECIFICATIONS

1.1 Cabinet and Refrigeration Unit

Cabinet Construction

Exterior / Interior finish:	White powdercoat on galvanised steel.
Insulation:	50mm thick, polyurethane foam. Cyclo-isopentane blowing agent: C_5H_{10}/C_5H_{12}

Dimensions

Models:	YA850i Solid Back	YA850iRD Rear Door	YA1700i Solid Back	YA1700iRD Rear Door
Height (adjustable):	2470 - 2485mm		2470 - 2485mm	
Width:	800mm	800mm	1600mm	1600mm
Depth:	765mm	830mm	765mm	830mm
Floor area:	0.61m^2	0.66m^2	1.22m^2	1.33m^2
Internal volume:	825 litres	825 litres	1765 litres	1765 litres

Electrical

230-240 Volts a.c. 50 Hz, single phase. Separate power supply per refrigeration unit.

Cooler - rated current:	5.8 Amps	6.1 Amps	2 x 5.8 Amps	2 x 6.1 Amps
Freezer - rated current:	7.6 Amps	7.9 Amps	2 x 7.6 Amps	2 x 7.9 Amps

Lighting

Vertical interior lights:	2 x 58 W fluorescent tubes	4 x 58 W fluorescent tubes

Door/s

Glass door: Self-closing, aluminium framed, triple glazed with heated film and toughened safety glass. Heated door frame (in freezer mode).
Glass door size: 1851mm x 786mm wide.

Optional solid rear door: Self-closing, foam filled and painted with internal duct.
Solid rear door size: 1626mm high x 726mm wide.

Shelving

White plastic coated, adjustable cantilevered, steel wire shelves.

Optional speedfeed matting system, on painted shelf.

Refrigeration System

Electronically controlled, top mounted, SKOPE Cyclone® refrigeration unit/s.
Each Yarra door has its own Cyclone® refrigeration system.
Each Cyclone® unit has a dedicated electronic controller with its own separate power supply.

Models:	Cooler	Freezer
Nominal capacity:	725 Watts	1105 Watts
Compressor:	Danfoss SC15G	Kirby AKL26ZS
Refrigerant:	R134a	R404A
Charge:	470 grams	630 grams

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1.2 Standard Specifications

- Full height, supermarket 'Cool Room' dimension, modular merchandising cabinet - available as integral & remote
- FRONT LOADING with solid back
- REAR LOADING with solid rear doors and heated door surrounds
- COOLERS: R134a refrigerant (CFC & HCFC free) - integral option only
- FREEZERS: R404A refrigerant (CFC & HCFC free) - integral option only
- Insulation: 50mm high-density cyclo-isopentane polyurethane foam (CFC, HCFC & HFC free)
- Built-in support system for corporate fascia panel (pelmet)
- Accessible, easy clean surfaces
- Durable construction in rust-resistant galvanised steel with white epoxy powder coat finish
- 5ft vertical fluorescent lights on both sides of each door opening give maximum product illumination
- Light switch for interior lights
- Self-closing glass doors with long life replaceable magnetic door gaskets
- SKOPE heated triple glazed, toughened safety glass
- Full length ergonomic 'soft curved' profile door handles
- Five adjustable cantilever wire shelves
- Electronic controller with:
  - digital temperature display
  - temperature and refrigeration alarms
  - HACCP control and logging functionality
  - real time clock (for HACCP, and for defrost control)
- COOLER mean operating temperature +4°C in 40°C ambient - integral
- FREEZER mean operating temperature
  -18°C to -23°C in 32°C ambient-integral (limited to peal loads).
- SKOPE removable integral Cyclone® refrigeration system one per door, for easy exchange servicing, if required
- Condenser air-on is front or top entry with controlled vertical exit
- Swivel, front lockable & adjustable castors (115 - 130mm high)
- 230 ~ 240 Volts a.c. 50Hz, single phase power supply
- Current draw of 5.8 Amps per Chiller door module and 7.6 Amps per Freezer door module
- One door YARRA 850 has two 5ft fluorescent lights of 58 watts each, total of 116 watts
- Two door YARRA 1700 has four 5ft fluorescent lights at 58watts each, total of 232 watts
- Six adjustable cabinet stabilizer feet as standard
- Door switches control internal fans and reduce energy use (in freezer mode only).

2.1 Non-Ducted Ventilation System

With this method the shop air-conditioning should be sized to allow for the additional refrigeration heat load. This must be checked by an experienced qualified air-conditioning engineer.

Features:

- Simple installation; where the cabinet is wheeled in place and plugged into the power supply (ensuring correct pelmet placement so that it butts up to the facia panel, plus the option of using the 'Ducted Ventilation System' – flexi duct).

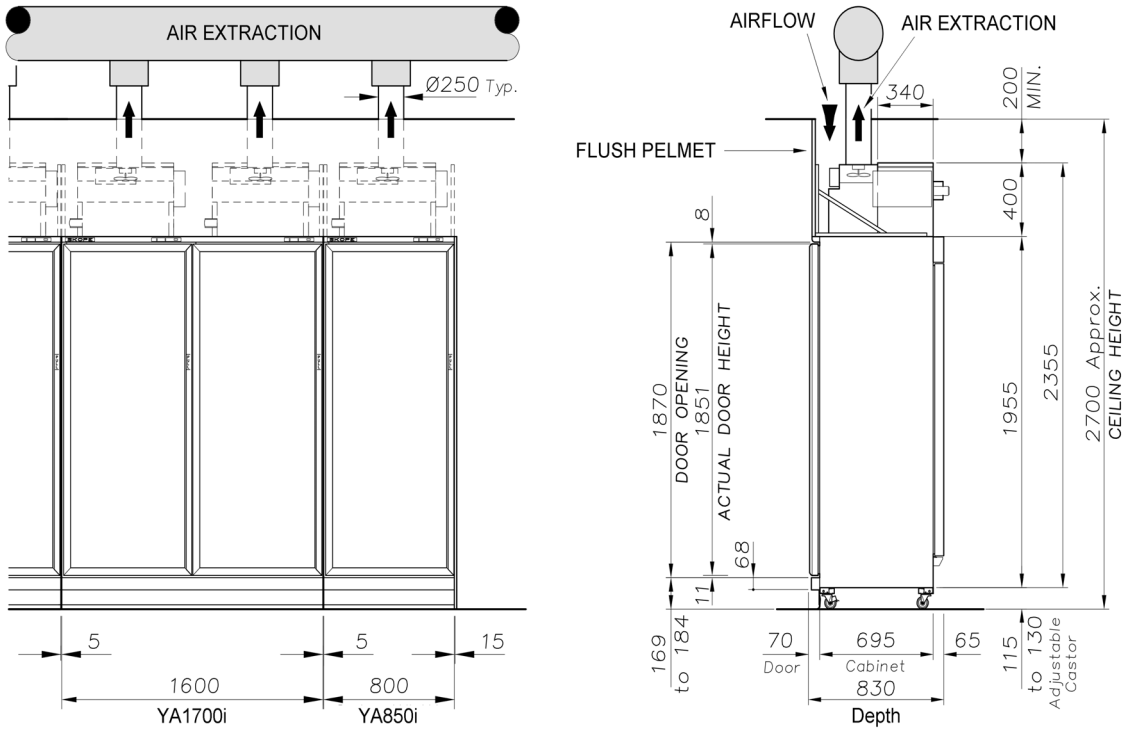


Figure 1: Installation utilising Air-Conditioning

2.2 Ducted Ventilation System

The Yarra units are designed so that the condenser discharge air can easily be ducted away (see figure 2 below). For this feature, it is a requirement that the air extraction rate of the building ventilation system matches up to the unit airflow.

The top of the fan guard assembly has four punched tabs for each fan. If this feature is required: cut the tab retainer and fold the four tabs up 90°. The SKOPE supplied flexi-duct (1m long) can then be fitted over the four tabs and cable tied in place. The other end of the flexi-duct should then be attached to the building ventilation via a 250mm spigot (not supplied).

Full Heat Load Rejection (per door):
Cooler 1170w @ 140L/S

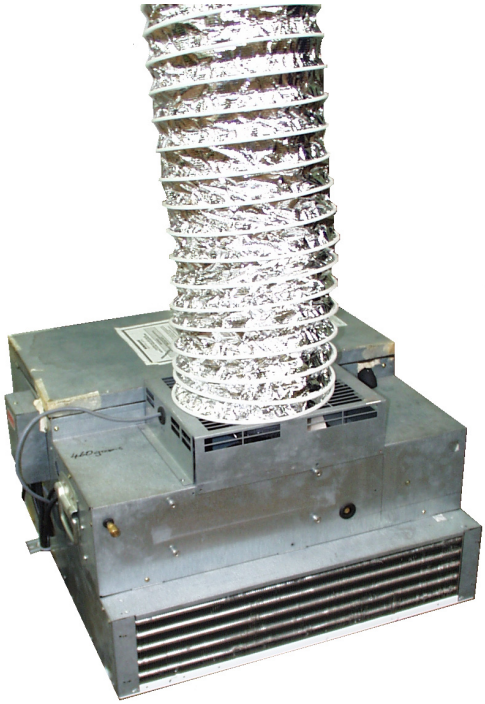


Figure 2: Ducted Ventilation System

3.1 Shop Fitting Details

Opening Width

It is recommended that any opening that is to constrain any number of cabinets has clearance to allow for:

- slight variations in cabinet width.
- accuracy variations in the opening width.
- a clearance that will allow un-hindered cabinet placement.

As a general rule:

Minimum opening width=(total of cabinet widths) + (number of cabinets x 5mm) + 30mm.

Constraints

The height, position and construction of any pelmets / bulkheads / beams etc., should be considered prior to the installation of SKOPE Yarra cabinets.

Allowance must be made for on site positioning of the cabinets, i.e. physical constraints such as the height and position of the sign assembly (if fitted), and top mounted refrigeration units will need to be considered to facilitate installation. The construction and fitting of pelmets / Bulkheads must allow for servicing access to refrigeration evaporator unit components.

Provision for clearence above and in front of the SKOPE Cyclone® units must be made so that servicing can be achieved.

3.2 Pre-Installation Information

It is important to completely read the installation requirements before installation is attempted. Due to the nature of the installation involving the movement of heavy refrigeration units onto a tall cabinet, great care must be used.

- COOLER UNIT weight: 53 kg.
- CABINET height: 2085mm

The Yarra refrigeration unit is delivered in a crated wooden box. On opening the wooden box first visually check the entire unit to confirm there is no freighting damage.

With the Yarra as supplied/packaged the Refrigeration Cabinet Wiring Junction Box can be found on the roof top of the refrigeration cabinet. The box must be removed for clear installation of the refrigeration unit.

To remove the Junction Box loosen the two screws at the top handle end (45º fold end) of the box, securing it to the cabinet roof, and slide clear of the screws. It is important to tighten these screws again, when the box is clear, to minimise their protrusion out of the cabinet roof top.

Remove unit fixings and prepare to lift refrigeration unit from shipping box. The unit will be required to be lifted onto the top of the refrigeration cabinet (note cabinet height). It is important that the unit is not then dragged into position on top of the cabinet as this will damage the unit seals; therefore lifting must be in a controlled fashion.

Cabinet Wiring Junction Box

A Cabinet Wiring Junction Box exists for each separate refrigeration unit (and hence front door) incorporated in a Yarra. A single door Yarra has one refrigeration junction box, a double door Yarra has two. For a 2-door Yarra all electrics located within a given side (left front door or right front door side) of the cabinet are effectively supplied through the Junction Box situated on that side of the cabinet (see fig. 4).

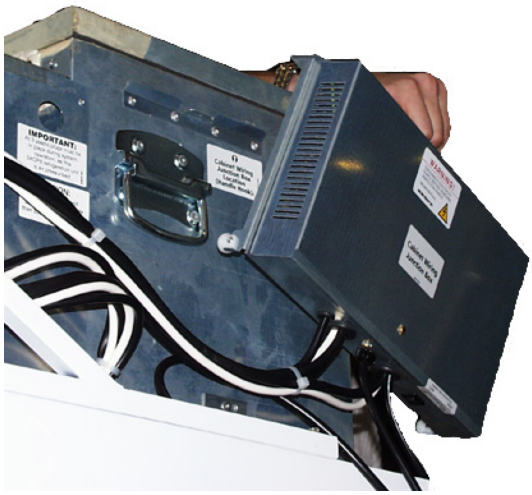


Figure 4: Cabinet Wiring Junction Box

The mains supply for the refrigeration Cabinet Wiring Junction Box is connected through a socket (white 'Ensto' socket) located on the refrigeration unit. Connections for all primary electrical components within the refrigeration cabinet (lights, heater wires and neons etc.) can be traced back to and checked within the Junction Box.

COOLER: Where COOLER refrigeration units are fitted to the refrigeration cabinet, to form a Yarra cooler, the Cabinet Heating Switch must be set to the LOW setting.

IMPORTANT ...

The Cabinet Wiring Junction Box power supply plug (white 'Ensto' plug) MUST be plugged into a (white 'Ensto') socket only on the refrigeration unit to which the junction box is mounted. To ensure correct functioning only one Cabinet Wiring Junction Box should ever be plugged into a single given Yarra refrigeration unit at any given time.

Unit Control Box

This can be fitted to either the front or rear of the refrigeration unit. For a solid back cabinet the Control Box must be fitted to the front of the unit (as supplied). Unless rear access is available to the unit. For a rear door cabinet the control box can be shifted to the rear of the refrigeration unit.

Controller

This has several optional locations. As supplied it is mounted vertically upwards on the end of the Control Box (this is only for production and freighting purposes). For a rear door machine the controller can remain mounted to the control box with it rotated to either a horizontal facing position or a downward facing position. Alternatively for either a rear door or solid back machine the electronic controller (display) can be mounted to the front of the machine on the unit (in a horizontal or vertical facing position).

NOTE ...

The Yarra cooler door activated switch is inactive as the blue Ensto is not used (The cooler refrigeration units have no blue sockets, for the switch to plug into).

3.3 Assembly Procedure

Refrigeration Units

1. After removing refrigeration units from their crate, replace the lid and use the crate as a workstation to position the units on top of the cabinet.

2. Remove the Facia Support Frames screwed to the top of each cabinet. Put aside - noting left and right hand (spacers at top of frame facing inwards).

3. Check the integrity of the unit seal around the perimeter of the evaporator box (it must be a complete airtight seal). Remove the protective paper from the inseal gasket.

4. The control box can then be lifted up and away from its locating keyholes (this will initially include the electronic controller). Carefully drape the power cables to the rear of the refrigeration unit, and locate the control box on the back of the evaporator box to its fixed keyhole mounts. Refit control box fixing screw and control box cover.

5. Lift the refrigeration unit on top of the cabinet in a careful controlled manner; it should be guided into correct position by a person on a secure step ladder.

6. Position the units from the rear of cabinet, taking care not to rest the units on the rear wiring cover, located above the solid doors.

NOTES ...

To prevent damage to the Unit base, the unit must be placed on the cabinet top and not slid.

Confirm that the unit is in the correct position. The two unit mounting brackets must align with the mounting holes on the cabinet top (small holes in bracket).

It is important to then ensure that the unit is square to the cabinet top (confirm parallel 80mm clearance from cabinet side to unit side, and parallel 10mm clearance from cabinet back to unit back. Secure the unit in place through the two brackets with two 14g screws (as supplied).

With the unit installed the Cabinet Wiring Junction Box can be positioned in place (hooked) on the 45º mounting bracket situated on the RHS of the unit evaporator box above the unit handle. Before this is achievable a locking screw at the centre of the 45º Cabinet Wiring Junction Box mounting bracket must be removed. If suitable/necessary for the given installation access requirements it is recommended that the locking screw be replaced once the junction box is in position.

IMPORTANT ...

Check and confirm all electrical cables are in a satisfactory location. All exposed electrical cables should be double insulated, non-stressed and secured away from sharp or hot surfaces.

Facia Panel

1. The cabinet can now be rotated to fix the Facia Support Frames. Do not tighten yet (screws should still be firm).

2. Hang the Front Facia Panel in position, over the spacers in the support frames. Push down and screw lower locking screws in place.

Figure 5: Solid Pelmet Removal

Joining Cabinets

1. Push cabinets together, and fit M8 bolts, washers and nuts through the support frames (front and rear) at both top and bottom of cabinet. Do not fully tighten at this stage.

2. Start adjusting the castors to line the cabinets up both vertically and horizontally. Line up the bottom hinge covers first, using the centre cabinet as a reference point. When the hinge covers are level, use the rear castors to line up the front face of the cabinets and control panels.

3. When the front control panels and bottom hinge covers are lined up, tighten the locking screws joining the cabinets. Start with the bottom front and then the top rear. When making these adjustments to correctly align the cabinets, it is important to keep checking the door alignment.

4. Now the joined cabinets can be moved into their final position, with the site supplied facia. Once in place, lock the front castors and lower the stability feet until all castors are clear of the floor.

5. At this point, adjustments can be made to the Facia Support Frames to line up the cabinet facia with the site supplied facia. After final adjustment, tighten screws locking the Facia Support Frames in place.

Coving Gear

1. Loosen the locking screws holding the two black panels of the coving gear together, and screw into position on each cabinet (use the screws provided).

2. Start by laying the black plastic coving strip out on the floor in front of each cabinet. Slide black plastic coving strip between the two panels, by starting at one end of the cabinet.

3. Trim off any excess coving strip, when satiffactory seal with the floor has been achieved. Tighten the locking screws holding the panels together.

Boston Bumper

1. The Boston Bumper Strip should be left flat overnight, to allow for any shrinkage.

2. Starting at either end of the cabinet line-up, lock the Boston Bumper into the retainer using a either a rubber hammer or the heel of your hand. The Boston Bumper Strip has two locking ridges, which must both go into the grooves in the retainer.

3. When approximately one metre from the end of the cabinet lineup, mark the end of the strip and trim the excess with a sharp knife.

4. Press the trimmed end into position and hammer the rest of the strip into the retainer.

Rear Doors

1. After the cabinet alignment procedures, it is possible the rear doors have moved out of alignment. This can be rectified by loosening the screws in the bottom hinges, and tapping the rear door either right or left, and then re-tightening the screws.

2. If the rear doors have moved, it is important to check there is still clearance between the rear door duct and the cabinet rear door opening.

3. The duct position can be altered by loosing the screws, holding it to the rear door, and moving it to correctly align with the door opening.

Shelving

Shelfing consists of six layers of plastic coated wire shelves, with left and right handed cantilever barckets (six pair per door).

The cantilever brackets have a bend in them, which points inwards. This enables the brackets to sit inside the shelf frame. To improve gravity feed and presentation of product the brackets can be set at three different positions, at 5° increments.

The shelves have a strenghtening bar along the width of the shelf. This strenghtening bar goes to the front of the cabinet. Also supplied with the shelving is the ‘Speedfeed’ gravity system of plastic matting and associated accessories. The matts are already assembled, and are in the packing crates with the units.

To assemble the shelving:

1. Fit shelf brackets into cabinet, to suit product layout.

2. Fit shelfs over the brackets, starting at the bottom of cabinet.

3. Lift rear of shelf slightly, and fit one layer of assembled matts (hooks to rear) in place. The hooks on each matt will hold the matts in place, and retain product with the moulded product riser.

4. The plastic product dividers can then be fitted in the matt grooves, and slid forward to engage the locking tabs. The tabs must stay in the same groove for the depth of the matt, or the locking tab will not fully engage.

5. The aluminium ticket strip is then ready for product identification and pricing labels.

6. Important: On the two door model, the section of ‘Speedmatt’ without the moulded product riser, goes behind the centre pillar.

3.4 Commissioning Of Machine

Completely assemble the Yarra as per 'Installation' section of this manual. Ensure all electrical safety instructions are adhered to; including all local electrical safety regulations.

IMPORTANT ...

It is important to note that each Yarra door has its own refrigeration system and its own power supply. Therefore a two-door cabinet has two separate power supplies.

For any service or detailed maintenance, it is important to unplug both power supplies to the cabinet.

1. Plug in machine to power supply. Note there is one refrigeration unit and power supply per cabinet front door, i.e. the two-door Yarra has two power supplies.

2. Confirm the operation of each refrigeration unit (per door). The Cooler unit's condenser fan runs continuously from plugging in of the machine.

Each Freezer unit has two condenser fans (external fans on top of unit). The Left side condenser fan will immediately operate (the right hand fan will also 'free spin', due to pressure from the left fan).

After approximately 1 minute time delay, the compressor and R/H condenser fan will start (indicated on controller display by illuminated refrigeration symbol). The compressor will continue to operate until the controller setpoint is reached (SKOPE Setpoint Cooler = 2°C, Freezer = -21°C).

The evaporator fan will start (internal cabinet fan), once the evaporator coil is cold (approximately 3 minutes after plugging in). The evaporator fan should operate continuously (except on the freezer, during defrost).

Freezer only: Note that when a cabinet door is opened (also the rear door on a rear door cabinet); the fan for that door will turn off (the fan is immediately de-powered but will 'free-spin' for up to 30 seconds). This is indicated by illumination of the 'Red' indicator light on the cabinet control panel (and rear wiring cover on rear door models); to indicate the door is opened and the fan is 'OFF'.

3. Check electronic controller 'real time clock' (see p. 30).

4. Confirm the operation of cabinet lighting. Cabinet lighting is controlled by a switch on the cabinet control panel. When this is switched 'ON', both vertical lights for that door should operate.

5. Confirm the operation of cabinet anti-sweat heater wires: Check that for a cooler, the heating relating to each power supply to the cabinet (one supply per front door), is switched to 'LOW' and for a freezer, each heating supply is switched to 'HIGH' (Cabinet Heating Switch is located on bottom of Cabinet Wiring Junction Box).

Additional to the electrics located within the corresponding side of cabinet; the left hand Cabinet Wiring Junction Box also controls the pillar anti-sweat heater wires (two-door model only), whilst the right hand Junction Box controls the cabinet front perimeter heater wires.

6. Ensure the doors self close completely and their gaskets form an airtight seal around the complete door perimeter.

7. The Yarra should be left to run for a period of one hour prior to loading. During this time the machine should be checked to ensure correct cabinet pulldown and operational temperatures; and to check there is no vibration or excessive noise. After this time the Yarra can be loaded with product.

Ventilation System

Built-in Yarra installations require a Ventilation System. Instructions for this type of operation and use, must be verified with the plant installer (see pp. 12-14).

NOTE: The ventilation system must be switched ON and operate continuously. It may be thermostatically controlled.

4.1 Safety Information

When using any electrical appliance, basic safety precautions should always be observed. Read these instructions carefully, and retain for future reference.

IMPORTANT ...

Yarra cabinets have a separate power supply per unit. The two-door Yarra cabinet has two separate power supplies. Ensure both cabinet supply cords are disconnected from mains power supply before attempting to perform any electrical service or maintenance.

- Do not use this appliance for other than its intended use.
- Do NOT overload power supply
- Use this appliance only on the voltage specified on the rating plate, or in these instructions.
- Ensure ventilation of SKOPE refrigeration units.
- Operate under adequate cover from moisture and heat.
- Condenser coils must be kept clean. To ensure trouble free performance, it is recommended that on a regular basis the unit be isolated from the power supply and a vacuum cleaner used to remove dust and fluff from condenser and filters.
- Be careful not to touch moving parts.
- Do not cover the grilles or block the entry or exhaust of airflows.
- Do not probe any opening.
- Regulations require that all electrical work be carried out only by authorised persons. For your own safety and that of others, ensure this is done.
- If the refrigeration unit is required to be installed or removed from the cabinet, ensure all necessary safety precautions are observed.

4.2 Operation of Machine

Refrigeration Run Cycle

Initiated by Controller when the Cabinet Space Probe is warmer than the setpoint minus the differential temperature.

e.g. Cooler setpoint = 2°C; differential 3°C; therefore refrigeration run initiates at temperatures warmer than 5°C.

e.g. Freezer setpoint = -21°C; differential 3°C; therefore refrigeration run initiates at temperatures warmer than -18°C).

The Compressor will start and run until the setpoint temperature is reached (except during defrost).

Control Display: Refrigeration Indicator Light ON (refer to p. 28 for controller operation).

NOTE ...

The compressor has approximately 1 minute time delay when cabinet is first plugged into power supply.

The evaporator fan will only start after the evaporator coil probe is chilled, and will remain running while the evaporator is below this temperature (except during defrost).

Refrigeration Off Cycle

Initiated by controller when the ambient Probe reaches the Setpoint.

- Compressor = OFF
- Evaporator Fan = ON

Defrost Cycle

Initiated by Controller; 4 defrosts every 24 hours (1am, 7am, 2pm, 8pm).

- Compressor = OFF
- Cooler evaporator fan = ON
- Freezer evaporator fan = OFF
- Defrost elements = ON (Freezer only, cooler does not have defrost elements).

Control Display: Defrost Indicator Light ON. Terminated when the evaporator coil temperature reaches 10°C (defrost will usually take approx 12 minutes, dependent on ice build-up).

After defrost termination there is a 3 minute drip time where all refrigeration components are off. The '**Refrigeration Run Cycle**' will then continue (as above).

NOTE ...

During Defrost the Controller display will hold the temperature detected before the defrosting cycle began.

Cabinet Door Activated Switches

A cabinet door activated switch is located above each door (front and rear door). The switch directly controls the internal cabinet fan (freezer ONLY). When a Yarra freezer cabinet door is opened, the switch turns off the internal cabinet fan for that door. The fan turning off reduces the loss of cold air during door openings.

A red WARNING neon indicator is located above the door switch, on the cabinet control panel and rear wiring cover. The red light signals cool air is no longer being circulated inside the cabinet, for that particular door.

4.3 Loading

Shelves may be positioned at different heights to suit various products.

For even cooling and efficient operation, allow air space around packages etc.

- Do not block air entry or exit holes.
- Do not store product on bottom of cabinet.
- Do not allow products to overhang the front of the shelf as this could prevent the door from shutting or cause glass breakage. Leave an airspace of at least 50mm (2") above packages etc. on the top shelf.
- Do not load product above the 'Load Limit', as indicated by the labels on each side of the cabinet.

4.4 Cleaning

When necessary, wash both interior and exterior of cabinet with soapy water. Exterior of cabinet may be waxed with automobile polish for extra protection.

The machine must be disconnected from the
mains supply before cleaning the condenser.

IMPORTANT ...
Condenser coil and filter MUST be kept clean for efficient and reliable operation. Clean regularly with a brush, vacuum cleaner or plain water. Check filter every two weeks.

5.1 Microprocessor Display

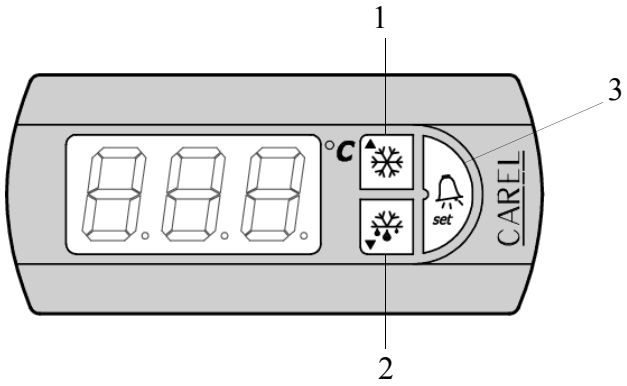


Figure 6: Microprocessor Display

There are three LED buttons which display the operating status of the controller:

Key	Button	Function
1		'UP' key. Light indicates COMPRESSOR is running. Flashing indicates manual request of Continuous Cycle is delayed by the compressor timed routine. INCREASES Set-Point values. Enables compressor CONTINUOUS CYCLE when pressed for more than 5 seconds.
2		'DOWN' key. Light indicates DEFROSTING. DECREASES Set-Point values. Activates a manual DEFROST CYCLE when pressed for more than 5 seconds.
3		**'SET'** key. Light indicates an ALARM (Press to mute audible alarm). Flashing indicates the corresponding function is delayed by a timed routine. DISPLAYS the Set-Point value.

During normal working conditions, the display shows the value measured by the ambient probe or by the second probe (parameter /4). If the alarm is activated, the relative code is displayed.

5.2 Alarms and Signals

The CAREL Electronic Controller will indicate and sound an audible alarm during fault conditions. The audible alarm can be turned off by pressing its 'mute' button. The alarm code will be flashed every few seconds with cabinet temperature.

Alarm Codes

A flashing LED indicates a time delay on the indicated function.

1d or 1A flashing …

- Refrigeration Unit over-pressure alarm (and over-temperature). The refrigeration unit has tripped on its high Pressure Switch. Note: This alarm is non-resetting.
- The activation of this alarm is a serious event. The ventilation to the refrigeration system is not adequate. Possible cause is blocked air filter, ventilation failure or refrigeration mechanical fault (see 'Trouble Shooting' pp. 44-47).
- The **1d** and **1A** alarm will also turn off power to the cabinet lighting; and the cabinet fascia anti sweat wires. This will assist keeping cabinet stock cool for the maximum period of time. The cause of the alarm should be investigated (see 'Trouble Shooting' pp. 44-47-).
- The Yarra cooler and freezer operate in different ways during the high pressure alarm:

Yarra FREEZER - 1d alarm

The alarm is locked on by a latching relay; and the compressor will continue to operate for strictly limited intervals (to keep product frozen for as long as possible). Once the cause of the fault has been eliminated the alarm can only be overridden by unplugging then re-plugging the refrigeration unit to the power supply.

Yarra COOLER - 1A alarm

The alarm is locked on by a manual reset High pressure Switch. This permanently shuts off the entire refrigeration system. Once the cause of the fault has been eliminated the Alarm can only be reset by pressing the RED Pressure Switch button on the side of the refrigeration unit (located approx. centre of left hand side – as viewed from the front of the cabinet).

dA flashing ... (FREEZER only)

- Indicates cabinet door has remained open in excess of 30 minutes.
- The refrigeration evaporator fan has been off for 30 minutes, and at alarm activation the compressor shuts off.
- The cabinet door must be closed; check sealing (if applicable check rear doors).

E1 flashing ...

- Indicates faulty evaporator probe.
- The probe cable is interupted or short circuited.
- Faulty sensor: remove probe and verify resistance (NTC: 25°C=10K Ohms).

EO flashing ...

- Indicates a faulty ambient probe.
- The probe cable is interupted or short circuited.
- Faulty sensor: remove probe and verify resistance (NTC: 25°C=10K Ohms).

LO flashing ....

- Indicates low temperature alarm.

- The alarm is overridden when temperature returns to ‘normal’.

HI flashing ....

- Indicates high temperature alarm. The cabinet has been warmer than alarm temperature for over 60 minutes.
- The alarm is overridden when the temperature returns to ‘normal’.

Ed flashing ...

- Defrost has terminated on ‘maximum defrost time’ function (**dP**). Confirm **dt**, **dP** and **d4** parameters are to SKOPE specification. Possible causes of **Ed** alarm:
- High cabinet usage / high humidity, causing excessive ice build up.
- Defrost failure (Freezer only): If one or more of the defrost elements have failed; check element connections and cables. Check element resistance.
- Faulty defrost probe: When this has occurred **EI** and **Ed** flashes. If a faulty defrost probe occurs, the controller will only terminate the defrost cycle on time (see **EI** fault above).

df flashing ...

- To indicate defrost in progress if parameter d6 = 0 (If programmed to SKOPE settings, d6 = 1).

EA,EB or EE displayed

- Data acquisition failure. Reset procedure must be performed.

5.3 Configuration Parameters

1. Press SET key for 5 secs; until **PS** is displayed.

2. Repress SET key and then UP or DOWN keys until **22** (password) is displayed. Press SET key to confirm.

3. Press UP or DOWN keys to scroll to parameter codes. See relevant SKOPE Control Parameters (pp. 33-38).

Programming mode is now accessed. Great care must be used to ensure operational parameters are not altered.

To exit modifying parameters and set values; press and hold SET key for at least 5 seconds.

NOTE ...

If during the above programming mode, no key is pressed for 60 seconds the electronic controller will return to normal operation mode and no changes will be effected.

YARRA – Real Time clock

The Yarra Type 2 Coolers and Freezers use a real time clock. This offers the benefits of real time defrost (controlled defrosting for off-peak times) and real time temperature alarm and power failure monitoring (HACCP compliant).

WARNING ...

The procedures below, fully access the SKOPE programming of the electronic controller. This programming should only be performed by competent people. Non SKOPE authorised modification of the operational parameters could cause Yarra failure and loss of stored product.

At commissioning of machine the electronic controllers time clock should be checked to confirm it is set to the correct time. During Yarra manufacture the real time clock is set in the SKOPE factory to current New Zealand time. In the summer months this would be to daylight saving time. The electronic controller features a battery back-up for maintaining time when the Yarra is unplugged.

Confirmation of the real time clock settings is done by pressing a combination of the three controller display buttons (keys).

As an example, if it was Thursday 2.47pm, when programming the electronic controller real time clock, do the following:

1. Enter configuration parameters (see instructions this page). Refer to relevant SKOPE Control Parameters (pp. 33-38).

2. Press the DOWN key once, to display **td** (actual DAY) parameter. Press SET key to display associated value for **td**.

3. Press UP and DOWN keys to set DAY value for **td** (range 1…7 = Monday … Sunday). As Example **td** would be programmed to 4 (4 = Thursday). Press SET key to display parameter **td**.

4. Press DOWN key once to display **th** parameter (actual HOUR – as 24 hour clock). Press SET key to display associated value for **th**.

5. Press UP and DOWN keys to set HOUR value for **th**. As Example **th** would be programmed to 14 (14 = 14:00 hours being in the hour of 2pm). Press SET key to display parameter **th**.

6. Press DOWN key once to display **tP** parameter (actual minute). Press SET key to display associated value for **tP**.

7. Press UP and DOWN keys to set MINUTES value for **tP**. As Example **tP** would be programmed to 47. Press SET key to display parameter **tP**.

8. To exit modifying parameters and Set values: press and hold SET key for at least 5 seconds.

NOTE: If during the above programming mode no key is pressed for 60 seconds the electronic controller will return to normal operation mode and no changes will be effected.

Real Time Defrost

Controlled Real Time Defrosting for Yarra Freezers and Coolers is standard set for every day at 1am, 7am, 2pm, and 8pm. This should correspond with off-peak times for Yarra usage. This relies on the Real time clock being set correctly as outlined above; note that it would need to be altered at daylight saving change-over (if applicable).

The time of defrost can be altered; however SKOPE recommend this only be done by experienced refrigeration service engineers. Correct defrosting is fundamental to reliable efficient Yarra operation. In normal circumstances this requires 4 spaced defrost events per 24 hours.

5.4 HACCP Functionality

The Yarra Type 2 Electronic Controller has HACCP functionality (Hazard Analysis Critical Control Points). This is designed to help the Yarra owner monitor food storage temperature in order to comply with the checking and recording phases required by the HACCP standards on correct food storage.

The Yarra electronic controller is HACCP compliant due to its ability to record alarm situations due to the exceeding of the maximum temperature thresholds for significant periods, which may derive from operating anomalies either with the Yarra refrigeration system or due to power failures.

As SKOPE standard the HACCP function is deactivated so the electronic controller will operate as follows:

- All standard system and temperature alarms are active. When an alarm event occurs the associated unit with the fault will turn off cabinet lighting and trim heaters; the electronic controller indicates alarm status with an audible and visual alarm.
- If the alarm status ends (eg the refrigeration system recovers to 'normal' temperature) the alarm status is overidden and any record of the alarm event is lost.

HACCP Alarm

If the HACCP function is activated (see below) it will maintain alarm status, with the day and time of the alarm event retrievable from the electronic controller memory. In addition to the normal alarms as above the HACCP function adds the following features:

- **HA** HACCP alarm signal is activated if the cabinet temperature is warmer than the programmed high temperature alarm (see relevant Program sheet parameter **AH**) for an extended period of time (see relevant Program sheet parameter **Ad** PLUS **tr** = total delay time. Note to be active **tr** must be at a value of one or greater). As an example for the Yarra Freezer alarm **HA** will activate once the freezer has been warmer than –11°C for 70minutes (assuming **Ad** = 60 and **tr** = 10).
- **HF** HACCP alarm signal is activated if the cabinet has a power failure of over one minute duration combined with (at power resumption) temperature warmer than the programmed high temperature alarm (as per relevant Program Sheet parameter **AH**).

To enable HACCP

Ensure the Real Time clock is correct.

1. Enter Configuration Parameters (see relevant SKOPE Control Parameters, pp. 33-38).

2. Press UP or DOWN keys until **tr** parameter is displayed (HACCP time delay. Note this value of time is a further time extension on normal alarm delay time; where **ad** = 60). Press SET key to display associated minute time value for **tr** (0 = HACCP disabled).

3. Press UP or DOWN keys for desired additional delay time (0< required for HACCP activation). Press SET key to re-display **tr** parameter.

4. Press UP or DOWN keys until **to** parameter is displayed (HACCP enable parameter). Press SET key to display **to** parameter value.

5. Press UP or DOWN keys to display **1** (1 = HACCP enabled… 0 = HACCP disabled). To exit modifying parameters press and Set values by holding SET key down for at least 5 seconds.

NOTE:
If during the above programming mode no key is pressed for 60 seconds the electronic controller will return to normal operation mode and no changes will be effected.

To read HACCP alarm activation

At HACCP alarm activation the operater should determine whether there is spoilt product; and how to deal with this. The time of the alarm event should be read and the HACCP alarm reset.

1. Enter configuration parameters (see relevant SKOPE Control Parameters, pp. 17-22).

2. Press UP or DOWN keys until relevant HACCP time parameters are displayed. Press SET key to display ALARM day (range 1 …7 = Monday… Sunday), hour (24 hour clock), and minute.

3. To reset ALARM; change parameter **to** to **0**. Exit modifying parameters by holding SET key down for at least 5 seconds.

4. It is then necessary to re“enable” HACCP as above.

5.5 Cooler Control Parameters

SKOPE YARRA COOLER
CAREL Power Split Electronic Controller (type 2)
SETPOINT: +2 (Cycling 2°C to 5°C)

	SKOPE Settings		Type	Min	Max	Def	PARAMETER
PS	22		F	0	199	22	Password
							PROBE PARAMETERS
/2	4	-	C	1	15	4	Probe reading stability (1=quick, 15=slow).
/4	0	Not used. Must be 0	C	0	100	0	Virtual probe (diff between regulation and product probe).
/7	0	Display probe.	C	0	4	0	Display of display probe.
/t	1	Ambient probe.	C	1	4	4	Temp display (normal 1=Amb probe. Service 2=Evap coil probe).
/5	0	°C	C	0	1	0	Units of temperature measurement.
/6	0	Yes	C	0	1	0	Decimal point display.
/8	0.0	Not used. Must be 0	C	-200	200	0	Calibration probe 3.
/9	0	Defrost probe	C	0	1	0	Defrost probe designation.
/A	2	Yes, only defrost Probe	C	0	3	2	Existance of Product and Defrost probe.
/C	3.0	Offset = +3°C	C	-199	199	0	Calibration of Ambient probe.
/d	0.0	Offset = Zero	C	-199	199	0	Calibration of Defrost probe.
							ALARM PARAMETERS
A0	1.0	1°C	C	0	199	2	Alarm and Fan differential.
A4	1	HP alarm activation	C	0	9	0	Digital input One.
A5	0	Not used	C	0	9	0	Digital input Two.
A7	0	Not used	C	0	199	0	Door open alarm delay time (digital input Two).
Ad	60	60 minutes delay	C	0	199	120	Temperature alarm delay.
AH	7.0	10°C	F	0	199	0	High temp alarm (On=Setpoint+AH+AO) (Off=Setpoint+AH).
AL	4.0	-3°C	F	0	199	0	Low temp alarm (On=Setpoint -AL -AO) (Off=Setpoint -AL).
							COMPRESSOR PARAMETERS
c0	1	1 minute delay	C	0	15	0	Compressor start delay at power on.
c1	3	3 minutes	C	0	15	0	Minimum time between compressor starts.
c2	3	3 minutes	C	0	15	0	Minimum compressor OFF time.
c3	0	0	C	0	15	0	Minimum compressor ON time.
c4	20	20 minute runtime	C	0	100	0	Comp. runtime for HP alarm & probe failure (offtime =15 mins).
c6	2	2 hours	C	0	15	4	Duration of alarm override after “Continuous Refrigeration Mode”.
cc	2	2 hours	C	0	15	2	Duration of “Continuous Refrigeration Mode”.
							DEFROST PARAMETERS
d0	0	Electric	C	0	1	0	Type of defrost.
d2	1	Generic defrost control	C	0	1	0	Defrost control (0=generic, 1=slave of powersplit).
d4	0	No	C	0	1	0	Defrost at cabinet plug in.
d5	0	No delay	C	1	199	0	Defrost delay.
d6	1	Yes	C	0	1	1	lock in temperature display during defost.
d8	1	1 hour	F	0	15	0	Alarm delay time after defrost.
d9	0	No	C	0	1	0	Defrost priority on compressor run times.
dd	5	5 minutes	F	0	15	2	Defrost drip time, before compressor and evaporator fan start.
dI	0	Deactivated	F	0	199	8	Interval between defrosts - NOT USED in lieu of real time defrost.
dP	40	40 minutes	F	1	199	30	Maximum defrost time.
dt	5.0	5°C	F	-50	199	40	Defrost termination temperature (resolution=0.1°C).

Parameters continued on next page

5.5 Cooler Control Parameters

SKOPE YARRA COOLER
CAREL Power Split Electronic Controller (type 2)
SETPOINT: +2 (Cycling 2°C to 5°C)

	SKOPE Settings		Type	Min	Max	Def	PARAMETER
							FAN PARAMETERS
F0	1	Fan control to evap. temp	C	0	1	0	Fan control (0=always on. 1=controlled on evap. temperature).
F1	5.0	Fan on at 5°C	F	-40	50	50	Fan start temperature (resolution=0.1°C).
F2	0	No	C	0	1	1	Fan OFF when compressor is off.
F3	0	No	C	0	1	1	Fan OFF during defrost.
Fd	0	No	F	0	15	1	Fan delay after drip time.
							AUXILLARY PARAMETERS
H0	1	Address	C	0	19.9	1	Serial address (0=master, 1-199=slave).
H1	7	Alarm relay	C	0	7	5	Aux 1 relay function - 7=alarm relay (INVERSE SWITCHED).
(H2)	0	N/A	C	0	7	6	Aux 2 relay function - Not available.
H3	0	Enable keypad	C	0	1	0	Disables keypad (0=enable, 1=disable).
In	0	Slave	C	0	1	1	Master / slave unit configuration (0=slave, 1=master).
L1	0	Disabled	C	0	2	0	Light sensor adjustment - Not used.
Lt	10	N/A	C	1	15	10	Light duration - Not used.
Lo	0	Disabled	C	0	3	0	Enable “Local” keyboard.
LL	0	Disabled	C	0	199	0	Enable “net - LAN or Supervisor”.
Ld	0	Not used	C	0	1	0	Use of LAN on Digital input 2.
							CYCLE PARAMETERS
r1	0	0°C	C	-500	r2	-500	Minimum Setpoint.
r2	10	10°C	C	r1	1999	900	Maximum Setpoint.
r3	1	Yes enable “Ed” alarm	C	0	1	0	Enabling “Time out Defrost Alarm” ‘Ed’
r4	-19	Not used	C	-19	199	30	NOT USED - Night “Setpoint” (Resolution=0.1°C).
r5	1	Enabled	C	0	1	0	Min. & Max. temp. monitoring (Note: unplugging looses memory).
r6	0	Not used	C	0	1	0	Night regulation with product probe - Not used.
rd	3	3.0°C	F	0	199	20	Setpoint differential (Resolution=0.1°C).
rH	-	-	F	0	0	0	Max. temp. measured during ‘rt’ (Resolution=0.1°C).
rL	-	-	F	0	0	0	Min. temp. measured during ‘rt’ (Resolution=0.1°C).
rt	-	-	F	0	0	0	Real time interval for temp. monitoring (as ‘r5’).
S8	1	19200 Baud	C	0	1	1	Serial speed: RS485 (0=9600 Baud, 1=19200 Baud).
Sn	1	Operates as Slave	C	0	5	1	Number of slaves (for Master unit only: 0=no slaves). As slave=1.
St	**2**	**SETPOINT=2°C**	**C**	**r1**	**r2**	**-100**	**Setpoint (Resolution=0.1°C).**
							HACCP PARAMETERS
to	**0**	**NOT ACTIVE**	**C**	**0**	**1**	**0**	**0=HACCP alarm not active. 1=HACCP alarm active (0 to reset).**
*tu	-	-	C	1	7	0	Day of ‘HA’ activation (temp. alarm) 1 to 7 days (1=Monday etc.).
*th	-	-	C	0	23	0	Hour of ‘HA’ activation (temp. alarm) 0 to 23 hours (0=Midnight).
t	-	-	C	0	59	0	Minute of ‘HA’ activation (temp. alarm) 0 to 59 minutes.
ltu	-	-	C	1	7	0	Day of ‘HF’ activation (power failure) 1 to 7 days (1=Monday etc.).
lth	-	-	C	0	23	0	Hour of ‘HF’ activation (power failure) 0 to 23 hours (0=Midnight).
lt*	-	-	C	0	59	0	Minute of ‘HF’ activation (power failure) 0 to 59 minutes.
tr	0	Disabled	C	0	199	0	HACCP alarm delay (0=disabled).

Parameters continued on next page

5.5 Cooler Control Parameters

Sheet 3 of 3

SKOPE YARRA COOLER
CAREL Power Split Electronic Controller (type 2)
SETPOINT: +2 (Cycling 2°C to 5°C)

	SKOPE Settings		Type	Min	Max	Def	PARAMETER
User settings for optional Defrost - WARNING: Ensure adequate Defrosts							REAL TIME DEFROST
“^T1	10	Every day	C	0	10	0	Defrost event 1 - DAY (see table 1 below for day code).
“-T1	7	7 am	C	0	23	0	Defrost event 1 - HOUR.
“_T1	0	-	C	0	59	0	Defrost event 1 - MINUTE.
“^T2	10	Every day	C	0	10	0	Defrost event 2 - DAY (see table 1 below for day code).
“-T2	14	2 pm	C	0	23	0	Defrost event 2 - HOUR.
“_T2	0	-	C	0	59	0	Defrost event 2 - MINUTE.
“^T3	10	Every day	C	0	10	0	Defrost event 3 - DAY (see table 1 below for day code).
“-T3	20	8 pm	C	0	23	0	Defrost event 3 - HOUR.
“_T3	0	-	C	0	59	0	Defrost event 3 - MINUTE.
“^T4	10	Every day	C	0	10	0	Defrost event 4 - DAY (see table 1 below for day code).
“-T4	1	1 am	C	0	23	0	Defrost event 4 - HOUR.
“_T4	0	-	C	0	59	0	Defrost event 4 - MINUTE.
“^T5	0	-	C	0	10	0	Defrost event 5 - DAY (see table 1 below for day code).
“-T5	0	-	C	0	23	0	Defrost event 5 - HOUR.
“_T5	0	-	C	0	59	0	Defrost event 5 - MINUTE.
“^T6	0	-	C	0	10	0	Defrost event 6 - DAY (see table 1 below for day code).
“-T6	0	-	C	0	23	0	Defrost event 6 - HOUR.
“_T6	0	-	C	0	59	0	Defrost event 6 - MINUTE.
	Important to confirm:						REAL TIME CLOCK SETTINGS
tM	-	Set clock	C	0	59	0	Clock - Current minute
th	-	Set clock	C	0	23	0	Clock - Current hour
td	-	Set clock	C	1	7	0	Clock - Current day: 1=Monday ..... 7=Sunday.

Table 1 - Day Codes:

0	= Disabled
1 to 7	= Monday to Sunday
8	= Monday to Friday
9	= Saturday and Sunday
10	= Every day

WARNING:

1. This programming sheet is set exclusively for the SKOPE cooler program, with its dedicated Carel controller.
2. Any alteration from this program may adversely affect the SKOPE cooler operation.
3. Alteration of REAL TIME DEFROST MAY VOID WARRANTY.
4. A detailed controller manual is available for full HACCP specifications.
5. The SKOPE refrigeration units are configured for independent operation. The master / slave configuration must be set as “slave”.

5.6 Freezer Control Parameters

SKOPE YARRA FREEZER
CAREL Split Power Electronic Controller (type 2)
SETPOINT: -21 (Cycling -21°C to -18°C)

SKOPE Settings			Type	Min	Max	Def	PARAMETER
PS		22	F	0	199	22	Password
							PROBE PARAMETERS
/2	4	-	C	1	15	4	Probe reading stability (1=quick, 15=slow).
/4	0	Not used. Must be 0	C	0	100	0	Virtual probe (diff between regulation and product probe).
/7	0	Display probe.	C	0	4	0	Display of display probe.
/t	1	Ambient probe.	C	1	4	4	Temp display (normal 1=Amb probe, Service 2=Evap coil probe).
/5	0	°C	C	0	1	0	Units of temperature measurement.
/6	0	Yes	C	0	1	0	Decimal point display.
/8	0.0	Not used. Must be 0	C	-200	200	0	Calibration probe 3.
/9	0	Defrost probe	C	0	1	0	Defrost probe designation.
/A	2	Yes, only defrost probe	C	0	3	2	Existance of Product and Defrost probe.
/C	3.0	Offset = +3°C	C	-199	199	0	Calibration of Ambient probe.
/d	0.0	Offset = Zero	C	-199	199	0	Calibration of Defrost probe.
							ALARM PARAMETERS
A0	1.0	1°C	C	0	199	2	Alarm and Fan differential.
A4	8	HP alarm activation	C	0	9	0	Digital input One.
A5	2	Door open alarm	C	0	9	0	Digital input Two.
A7	30	Door alarm delay 30 mins	C	0	199	0	Door open alarm delay time (digital input Two).
Ad	60	60 minutes delay	C	0	199	120	Temperature alarm delay.
AH	9.0	-11°C / -12°C	F	0	199	0	High temp alarm (On=Setpoint+AH+AO) (Off=Setpoint+AH).
AL	10	-32°C / -31°C	F	0	199	0	Low temp alarm (On=Setpoint -AL -AO) (Off=Setpoint -AL).
							COMPRESSOR PARAMETERS
c0	1	1 minute delay	C	0	15	0	Compressor start delay at power on.
c1	3	3 minutes	C	0	15	0	Minimum time between compressor starts.
c2	3	3 minutes	C	0	15	0	Minimum compressor OFF time.
c3	0	0	C	0	15	0	Minimum compressor ON time.
c4	45	45 minute runtime	C	0	100	0	Comp. runtime for HP alarm & probe failure (offtime =15 mins).
c6	2	2 hours	C	0	15	4	Duration of alarm override after “Continuous Refrigeration Mode”.
cc	2	2 hours	C	0	15	2	Duration of “Continuous Refrigeration Mode”.
							DEFROST PARAMETERS
d0	0	Electric	C	0	1	0	Type of defrost.
d2	1	Generic defrost control	C	0	1	0	Defrost control (0=generic, 1=slave of powersplit).
d4	0	No	C	0	1	0	Defrost at cabinet plug in.
d5	0	No delay	C	1	199	0	Defrost delay.
d6	1	Yes	C	0	1	1	lock in temperature display during defost.
d8	1	1 hour	F	0	15	0	Alarm delay time after defrost.
d9	0	No	C	0	1	0	Defrost priority on compressor run times.
dd	3	3 minutes	F	0	15	2	Defrost drip time, before compressor and evaporator fan start.
dI	0	Deactivated	F	0	199	8	Interval between defrosts - NOT USED in lieu of real time defrost.
dP	25	25 minutes	F	1	199	30	Maximum defrost time.
dt	12	12°C	F	-50	199	40	Defrost termination temperature (resolution=0.1°C).

Parameters continued on next page

5.6 Freezer Control Parameters

SKOPE YARRA FREEZER
CAREL Power Split Electronic Controller (type 2)
SETPOINT: -21 (Cycling -21°C to -18°C)

	SKOPE Settings		Type	Min	Max	Def	PARAMETER
							FAN PARAMETERS
F0	1	Fan control to evap. temp	C	0	1	0	Fan control (0=always on. 1=controlled on evap. temperature).
F1	-8.0	Fan on at -8°C	F	-40	50	50	Fan start temperature (resolution=0.1°C).
F2	0	No	C	0	1	1	Fan OFF when compressor is off.
F3	1	Yes	C	0	1	1	Fan OFF during defrost.
Fd	0	No	F	0	15	1	Fan delay after drip time.
							AUXILLARY PARAMETERS
H0	1	Address	C	0	19.9	1	Serial address (0=master, 1-199=slave).
H1	7	Alarm relay	C	0	7	5	Aux 1 relay function - 7=alarm relay (INVERSE SWITCHED).
(H2)	0	N/A	C	0	7	6	Aux 2 relay function - Not available.
H3	0	Enable keypad	C	0	1	0	Disables keypad (0=enable, 1=disable).
In	0	Slave	C	0	1	1	Master / slave unit configuration (0=slave, 1=master).
L1	0	Disabled	C	0	2	0	Light sensor adjustment - Not used.
Lt	10	N/A	C	1	15	10	Light duration - Not used.
Lo	0	Disabled	C	0	3	0	Enable “Local” keyboard.
LL	0	Disabled	C	0	199	0	Enable “net - LAN or Supervisor”.
Ld	0	Not used	C	0	1	0	Use of LAN on Digital input 2.
							CYCLE PARAMETERS
r1	-26	-26°C	C	-500	r2	-500	Minimum Setpoint.
r2	-12	-12°C	C	r1	1999	900	Maximum Setpoint.
r3	1	Yes enable “Ed” alarm	C	0	1	0	Enabling “Time out Defrost Alarm” ‘Ed’
r4	-19	Not used	C	-19	199	30	NOT USED - Night “Setpoint” (Resolution=0.1°C).
r5	1	Enabled	C	0	1	0	Min. & Max. temp. monitoring (Note: unplugging looses memory).
r6	0	Not used	C	0	1	0	Night regulation with product probe - Not used.
rd	3	3.0°C	F	0	199	20	Setpoint differential (Resolution=0.1°C).
rH	-	-	F	0	0	0	Max. temp. measured during ‘rt’ (Resolution=0.1°C).
rL	-	-	F	0	0	0	Min. temp. measured during ‘rt’ (Resolution=0.1°C).
rt	-	-	F	0	0	0	Real time interval for temp. monitoring (as ‘r5’).
S8	1	19200 Baud	C	0	1	1	Serial speed: RS485 (0=9600 Baud, 1=19200 Baud).
Sn	1	Operates as Slave	C	0	5	1	Number of slaves (for Master unit only: 0=no slaves). As slave=1.
St	**-21**	**SETPOINT=-21°C**	**C**	**r1**	**r2**	**-100**	**Setpoint (Resolution=0.1°C).**
							HACCP PARAMETERS
to	**0**	**NOT ACTIVE**	**C**	**0**	**1**	**0**	**0=HACCP alarm not active. 1=HACCP alarm active (0 to reset).**
*tu	-	-	C	1	7	0	Day of ‘HA’ activation (temp. alarm) 1 to 7 days (1=Monday etc.).
*th	-	-	C	0	23	0	Hour of ‘HA’ activation (temp. alarm) 0 to 23 hours (0=Midnight).
t	-	-	C	0	59	0	Minute of ‘HA’ activation (temp. alarm) 0 to 59 minutes.
ltu	-	-	C	1	7	0	Day of ‘HF’ activation (power failure) 1 to 7 days (1=Monday etc.).
lth	-	-	C	0	23	0	Hour of ‘HF’ activation (power failure) 0 to 23 hours (0=Midnight).
lt*	-	-	C	0	59	0	Minute of ‘HF’ activation (power failure) 0 to 59 minutes.
tr	0	Disabled	C	0	199	0	HACCP alarm delay (0=disabled).

Parameters continued on next page

5.6 Freezer Control Parameters

SKOPE YARRA FREEZER
CAREL Power Split Electronic Controller (type 2)
SETPOINT: -21 (Cycling -21°C to -18°C)

	SKOPE Settings		Type	Min	Max	Def	PARAMETER
User settings for optional Defrost - WARNING: Ensure adequate Defrosts							REAL TIME DEFROST
"^T1	10	Every day	C	0	10	0	Defrost event 1 - DAY (see table 1 below for day code).
"-T1	7	7 am	C	0	23	0	Defrost event 1 - HOUR.
"_T1	0	-	C	0	59	0	Defrost event 1 - MINUTE.
"^T2	10	Every day	C	0	10	0	Defrost event 2 - DAY (see table 1 below for day code).
"-T2	14	2 pm	C	0	23	0	Defrost event 2 - HOUR.
"_T2	0	-	C	0	59	0	Defrost event 2 - MINUTE.
"^T3	10	Every day	C	0	10	0	Defrost event 3 - DAY (see table 1 below for day code).
"-T3	20	8 pm	C	0	23	0	Defrost event 3 - HOUR.
"_T3	0	-	C	0	59	0	Defrost event 3 - MINUTE.
"^T4	10	Every day	C	0	10	0	Defrost event 4 - DAY (see table 1 below for day code).
"-T4	1	1 am	C	0	23	0	Defrost event 4 - HOUR.
"_T4	0	-	C	0	59	0	Defrost event 4 - MINUTE.
"^T5	0	-	C	0	10	0	Defrost event 5 - DAY (see table 1 below for day code).
"-T5	0	-	C	0	23	0	Defrost event 5 - HOUR.
"_T5	0	-	C	0	59	0	Defrost event 5 - MINUTE.
"^T6	0	-	C	0	10	0	Defrost event 6 - DAY (see table 1 below for day code).
"-T6	0	-	C	0	23	0	Defrost event 6 - HOUR.
"_T6	0	-	C	0	59	0	Defrost event 6 - MINUTE.
	Important to confirm:						REAL TIME CLOCK SETTINGS
tM	-	Set clock	C	0	59	0	Clock - Current minute
th	-	Set clock	C	0	23	0	Clock - Current hour
td	-	Set clock	C	1	7	0	Clock - Current day: 1=Monday ..... 7=Sunday.

Table 1 - Day Codes:

0	= Disabled
1 to 7	= Monday to Sunday
8	= Monday to Friday
9	= Saturday and Sunday
10	= Every day

WARNING:

1. This programming sheet is set exclusively for the SKOPE freezer program, with its dedicated Carel controller.
2. Any alteration from this program may adversely affect the SKOPE freezer operation.
3. Alteration of REAL TIME DEFROST MAY VOID WARRANTY.
4. A detailed controller manual is available for full HACCP specifications.
5. The SKOPE refrigeration units are configured for independent operation. The master / slave configuration must be set as "slave".

6.1 System Service Notes

Servicing and electrical work should only be carried out by an authorised Service Agent.

Refrigeration Service work must only be performed by qualified and experienced refrigeration service engineers for HFC refrigerants. Special POE oil handling procedures must be used. R404A is a blend refrigerant therefore special handling procedures must be used to prevent refrigerant fractionation.

Dedicated HFC Equipment Required

- HFC Refrigerant Gauges
- HFC Vacuum Pump
- HFC Compatible Driers
- HFC Leak Detector
- R404A and R134a Pressure Temperature Chart (See p. 45).

During a service procedure the compressor must not be open to the atmosphere for a period totalling more than 15 minutes. For a service period exceeding this time Dry Nitrogen should be slowly passed through the compressor; or for extensive times the compressor should be isolated and its pipework brazed closed.

The HFC dryer must be replaced during every refrigeration service procedure.

The Yarra Cooler and Freezer Unit utilise an enclosed refrigeration system which when operational is pressurised. It is important that the unit only operates with all panels in place and all plastic plugs fitted so that all airflow correctly passes through the condenser and over the compressor.

Unit Electrical Box

The control box is optionally located on the front or rear of the refrigeration unit. This contains the Controller printed circuit board and associated components. Ensure power is off before any service work.

Cooler Unit

The Cooler unit is a R134a capillary fed system.

A low side schraeder valve is located at the front left of the unit (as viewed from front of cabinet). There is no high side access.

Typical stabilised suction pressures should be between 10psig and 20psig.

To confirm refrigerant charge perform a frost back check.

Frost Back Check (Cooler only)

Electrically disconnect the evaporator fan (ensure this is done in a safe manner at the control box) and remove the evaporator box lid; then run the refrigeration unit for 8 mins. After this time the entire evaporator coil and suction line must be frozen over (the suction line up to the compressor suction stub must be iced. The compressor body should have no ice on it). The easiest method to view the suction line at the compressor is to shine a torch through the condenser fan blade.

Freezer Unit

The Freezer unit is a R404A expansion valve system (with no receiver). Refrigerant charge volume is critical.

A low side schraeder valve is located at the front left of the unit (as viewed from front of cabinet). There is no high side access.

Typical stabilised suction pressures should be between 10psig and 20psig.

To confirm refrigerant charge check sight glass in stable operation. The sight glass should show dry and full liquid (the sight glass is located behind the unit front middle plastic plug; ensure the plug is refitted after viewing sightglass).

6.2 Freezer Service Check Information

Check setpoint by pressing SET key (SKOPE setting -21°C).

Check the airflow is not restricted by product blocking either discharge or return air-ports. Ensure that no product is stored below the bottom shelf.

Check refrigeration unit is sealing properly to top of cabinet i.e. unit fixing screws secured down firmly enough to ensure no leaks.

Check evaporator box lid is securely fastened and it is sealing properly.

During and after defrost the display locks onto the last displayed temperature, either until the system attains setpoint or after 60 minutes, the real temperature will be shown again.

Check that system pressures are within normal ranges. Suction pressures (at -19°C cabinet temperature, stabilised under load):

- 25°C air onto condenser 14 psi.
- 35°C air onto condenser 16 psi.
- 40°C air onto condenser 17 psi.

Possible reasons for low pressure readings (below 10 psi):

- Low refrigeration load
- Gas leak/s
- Restricted expansion valve
- Frozen evaporator coil

Possible causes of frozen evaporator coil:

- Evaporator fan failure
- Defrost failure
- Gas leak

If an electronic controlled unit is taken back to a workshop for repairs, it should be noted that in order to run the unit, you will either need to fit the original microprocessor supplied with the cabinet or have a spare programmed microprocessor.

6.3 Door/s: Glass

Glass Front Door/s

The glass front door/s are self-closing with triple glazed, heated, toughened safety glass. The door frame (on freezer models only) is also heated to prevent condensation. The total resistance for the standard door is approximately 350 ohms. Performance rated at 32°C ambient / 75% R.H. / -20°C internal cabinet temperature. The standard door is distinguished by its wattage being labelled at 8.5W/sq.ft.

Door Alignment

Each door can be adjusted so that it lines up with any adjacent door. In general, the doors are best adjusted so that the top section is parallel to the control panel. Adjustment is achieved by opening the door as far as possible. This allows access to the door position adjustment screw. By loosening this screw the door can be slid along to a position that provides best alignment. The locking screw is then re-tightened.

Door Removal

1. Slacken off door tension and remove pin from the bottom hinge.

2. Remove cabinet control panel and disconnect door flex wires at in-line connectors.

3. Remove step front cover (4/5 screws), to access hinge screws.

4. Unscrew top hinge and lift door clear of bottom pivot (care must be taken to avoid electrical wires around top hinge).

NOTE: Glass replacement is not considered economical as the glass is fixed to the frame for integral strength. Door replacement is recommended.

Door Reversal

To reverse the opening side of a door, the door must be replaced with one of the opposite hinging. The top and bottom hinge assemblies must also be replaced.

Gasket Replacement

The door gaskets simply clip into the door gasket retainer, and may be removed for repair or replacement simply by peeling away from gasket retainer, starting at the corners.

New gaskets, when fitted, may be lightly lubricated with a clear silicone grease or similar compound. This will lessen the possibility of the gasket rolling. Should the gasket be out of shape when in place, use hot air (i.e. from hair drier) to realign.

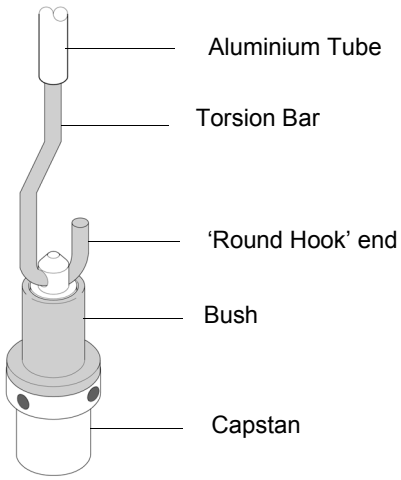


Figure 7: Torsion Bar

Door Tension Adjustment

IMPORTANT ...

Doors should only be tensioned enough that they self-close, with the door gasket forming an air tight seal. Over tensioning could result in deformation of the internal torsion bar.

1. Turn capstan with steel rod (Ø3mm), to remove tension on the split pin.

2. Using another steel rod, turn the capstan in the direction that the door closes, to increase the tension.

3. Replace split pin when the required tension adjustment has been made.

In the event the door tension can no longer be adjusted, the torsion bar may need replacing (see 'Torsion Bar Replacement' below).

Torsion Bar Replacement

1. Remove door from cabinet (see 'Door Removal' p.40). Lay door down on a flat surface with the gasket facing up.

2. Peel door gasket away from the hinge side of the door frame. Start at each corner and peel gasket off the gasket retainer, working towards the centre of the frame.

3. Remove the section of gasket retainer from hinge side of door frame. Lift from one corner, and peel away from the door frame.

4. Remove old torsion bar by carefully levering out the bottom bush from the door frame. Pull old torsion bar out from door frame. The end of the torsion bar will need manoeuvred, to allow the 'flat hook' end to clear the hinge hole.

5. Remove existing capstan and bush from old torsion bar.

6. Thread the capstan, complete with the bush, over the 'round hook' end of the new torsion bar (see figure 16 below).

7. Ensure the aluminium tube, moves freely up and down the torsion bar.

8. Fit the new torsion bar into the door frame. Ensure the open end of the 'flat hook' points upwards, and manoeuvre the torsion bar through the bottom hinge hole. After the torsion bar is inside the frame, press the open end of the 'flat hook' firmly under the outside lip of the door frame. Ensure the aluminium plate, used to protect the heater element from touching the torsion bar, is still correctly positioned inside the door frame. When the torsion bar is correctly installed, the capstan should not turn.

9. Hammer bottom of capstan into hinge hole, until the bush is flush with frame.

10. Refit the gasket retainer into frame.

11. Refit the gasket into the gasket retainer, starting at the corners and working towards the middle of the door frame.

12. Refit door to cabinet, and adjust door tension (see 'Door Tension Adjustment', this page).

6.3 Door/s: Solid

Solid Rear Door/s

Solid rear door/s are fitted to rear loading machines. The solid rear door uses a different hinge mechanism to the glass door (see figure 17 below).

Door Removal

Unscrew door bottom hinge bracket, and slide door down to remove from top hinge.

Door Tension

The solid door hinge mechanism has a preset tension and is non-adjustable. Ensure that the square notch in the hinge bracket mates correctly with the door hinge mechanism when replacing.

Door Gasket Replacement

The door gaskets simply clip into the door gasket retainer, and may be removed for repair or replacement simply by peeling from gasket retainer, starting at the corners. New gaskets, when fitted, may be lightly lubricated with a clear silicone grease or similar compound. This will lessen the possibility of the gasket rolling. Fit gasket by pushing corners in first, and then work inwards to position the remaining gasket. Should the gasket be out of shape when in place, use hot air (i.e. from hair drier) to realign.

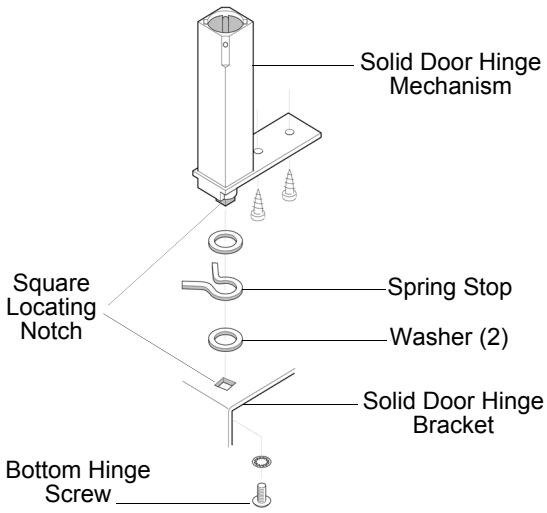


Figure 8: Hinge Mechanism

6.4 Interior Lights

Side Lights

To replace fluorescent tube or starter, compress the back section of the diffuser so that it disengages from the side light housing, and push back to gain access to light.

When refitting, engage back section of the diffuser into housing. Compress and snap front section of diffuser into place, progressively down its full length (see figure 9).

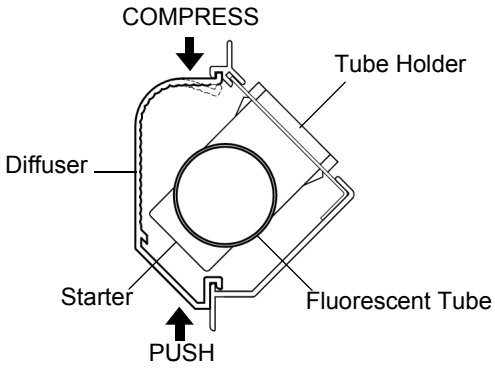


Figure 9: Side Light

Centre Pillar Light

Double door model YA1700, as well as having vertical side lights, is also fitted with centre pillar lights. The centre pillar houses two additional fluorescent tube lights and starters, accessed from each side of the centre pillar. The replacement procedure for the fluorescent tube and starters is the same as for the side lights, detailed above (see figure 10 below).

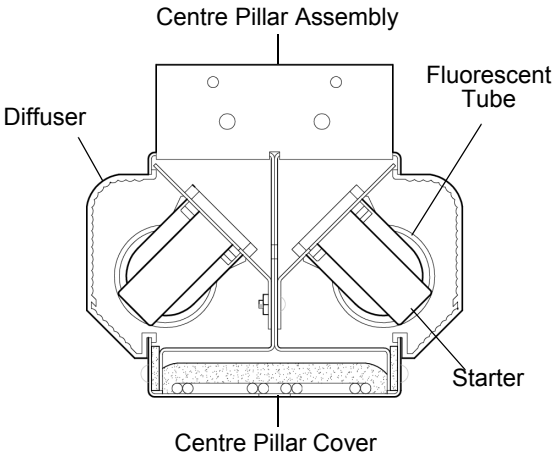


Figure 10: Centre Pillar Light

6.5 Cabinet

Cabinet Wiring Junction Box

The Refrigeration Cabinet Wiring Junction Box is the source of power to all primary electrics within the refrigeration cabinet. The only exception being the door activated switches and corresponding neons incorporated in the cabinet. These are supplied direct from the refrigeration unit. The door activated switches (blue 'Ensto' plugs) are not used for a cooler.

A Junction Box exists for each separate refrigeration unit (and hence front door). A one-door Yarra has one refrigeration Junction Box, a two-door Yarra has two. For a two-door Yarra all electrics located within a given side of the cabinet, are effectively supplied through the Junction Box situated on that side of the cabinet.

With the Yarra fully powered a clear coloured neon (indicator light) located on the cabinet control panel is illuminated (orange/yellow), signalling power supply to the Cabinet Wiring Junction Box. For a two-door cabinet the neon is located on the control panel at the same side of the cabinet as the Junction Box to which it relates.

In addition to electrical connections the Junction Box houses a fuse for the mains supply to the box and ballasts for the cabinet lighting (starters are located on the lamp holders within the sidelight assemblies).

An important feature of the Cabinet Wiring Junction Box is the 'Cabinet Heating Switch'. The switch is located on the underside of the box (where the electrical flexes exit the box).

COOLER: Where cooler refrigeration units are fitted to the refrigeration cabinet, to form a Yarra cooler, the Cabinet Heating Switch must be set to the LOW setting.

FREEZER: Where Freezer refrigeration units are fitted to the refrigeration cabinet, to form a Yarra freezer, the Cabinet Heating Switch must be set to the HIGH setting.

Cabinet Fuse and Lighting Ballast Replacement

The cabinet fuse and lighting ballasts are located inside the Cabinet Wiring Junction Box, attached to the side of each unit.

1. Remove the centre locking screw (nearest the unit) from on top of corresponding Cabinet Wiring Juction Box, and lift the Junction Box off the side of the refrigeration unit (see fig. 11 below).

2. To remove cover: remove the centre screw, and loosen the two outside screws on top of Junction Box.

3. The fuse and ballasts can now be accessed and replaced (see 'Spares' section, p. 58, for part descriptions).

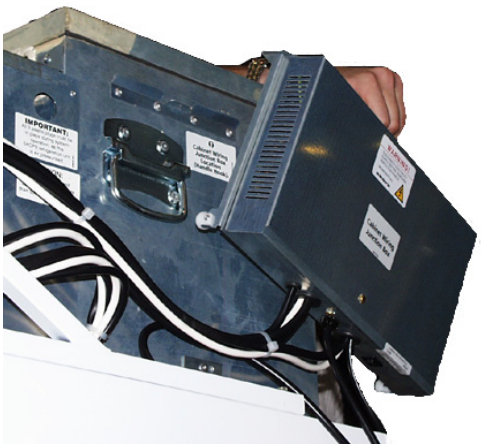


Figure 11: Junction Box Removal

6.6 Maintenance

Preventative Maintenance

SKOPE recommends a preventative maintenance program for the benefit of efficient trouble-free Refrigeration.

A preventative maintenance check at six month intervals is recommended as follows:

1. Check that the product is cold enough.

2. Check all electronic controller displays and ensure the ‘real time clock’ is correct and that no alarm codes are displayed (see p. 14).

3. Visually check the front face of the condenser radiator coil. If dirty it should be cleaned.

4. Check the cabinet is correctly loaded (that the airflow is not restricted). Ensure the product is not overhanging the shelves, ventilation holes are not restricted, and no product is loaded on the cabinet bottom (see ‘Loading’ p. 27).

5. Check the doors are self closing and that the door gasket forms a complete air tight seal.

6. Check all cabinet lights are working.

6.7 Pressure Temperature Chart

TEMPERATURE		R134a		R404A	
°F	°C	KPa	psig	Kpa	psig
-38.2	-39	-47	14.0	37	5.4
-36.4	-38	-45	13.2	44	6.3
-34.6	-37	-42	12.3	50	7.3
-32.8	-36	-38	11.4	57	8.3
-31.0	-35	-35	10.4	64	9.3
-29.2	-34	-32	9.4	71	10
-27.4	-33	-28	8.4	79	11
-25.6	-32	-25	7.3	86	13
-23.8	-31	-21	6.2	94	14
-22.0	-30	-17	5.0	103	15
-20.0	-29	-13	3.8	111	16
-18.4	-28	-9	2.6	120	17
-16.6	-27	-4	1.3	129	19
-14.8	-26	0	0.0	138	20
-13.0	-25	5	0.7	148	21
-11.2	-24	10	1.4	158	23
-9.4	-23	15	2.2	168	24
-7.6	-22	20	2.9	179	26
-5.8	-21	26	3.7	189	27
-4.0	-20	31	4.5	200	29
-2.2	-19	37	5.4	212	31
-0.4	-18	43	6.3	224	32
1.4	-17	49	7.2	236	34
3.2	-16	56	8.1	248	36
5.0	-15	63	9.1	261	38
6.8	-14	69	10	274	40
8.6	-13	77	11	288	42
10.4	-12	84	12	302	44
12.2	-11	91	13	316	46
14.0	-10	99	14	331	48
15.8	-9	107	16	346	50
17.6	-8	116	17	361	52
19.4	-7	124	18	377	55
21.2	-6	133	19	393	57
23.0	-5	142	21	410	59
24.8	-4	151	22	427	62
26.6	-3	161	23	445	65
28.4	-2	171	25	463	67
30.2	-1	181	26	481	70
32.0	0	192	28	500	73
33.8	1	202	29	519	75
35.6	2	213	31	539	78
37.4	3	225	33	559	81
39.2	4	237	34	580	84
41.0	5	249	36	601	87
42.8	6	261	38	623	90
44.6	7	274	40	645	94
46.8	8	287	42	668	97
48.2	9	300	44	691	100
50.0	10	314	46	715	104
53.6	12	342	50	776	113
57.2	14	372	54	828	120
60.8	16	403	58	881	128
64.4	18	436	63	938	136
68.0	20	471	68	996	145
77.0	25	565	83	1154	167
86.0	30	670	97	1327	193
95.0	35	787	114	1518	220
104.0	40	916	133	1728	251
113.0	45	1060	154	1957	284

6.8 Trouble Shooting

Complaint	Possible Cause	Repair
1. Compressor will not start - no hum.	Fuse removed or blown, no power.	Replace fuse, Check reason.
	Overload protector tripped.	Refer to electrical section.
	Thermostat stuck in open position.	Repair or replace control.
	Thermostat off due to cold location.	Relocate control.
	Wiring improper or loose.	Check wiring against diagram.
2. Compressor will not start - hums but trips on overload protector.	Improperly wired.	Check wiring against diagram.
	Low voltage to unit.	Determine reason and correct.
	Start capacitor defective on CSIR or CSR motor.	Determine reason and replace.
	Run capacitor defecive on PSC motor.	Determine reason and replace.
	Relay failing to close.	Determine reason and correct, replace if necessary.
	Compressor motor has a winding open or shorted.	Check resistance values. Replace compressor if necessary.
	Internal mechanical trouble in compressor.	Replace compressor.
3. Compressor starts, but does not switch off - starts winding.	Improperly wired.	Check wiring against diagram.
	Low voltage to unit.	Determine reason and correct.
	Relay failing to open, due to welded contacts or relay incorrectly mounted.	Determine reason and correct, replace if necessary.
	Run capacitor defective on CSR motor.	Determine reason and replace.
	Excessively high discharge pressure.	Clean condenser.
		Check power input watts.
		Possible overcharge, insufficient condenser cooling, or non-condenible gasses.
	Compressor motor has winding open or shorted. Check continuity and resistance.	Replace compressor if faulty.
	Internal mechanical trouble in compressor (tight). May be lubrication.	Replace compressor.

6.8 Trouble Shooting

Complaint	Possible Cause	Repair
4. Compressor starts and runs but short cycles on overload protector (relay may chatter on RSIR, CSIR and CSR motors).	Additional current passing through overload protector.	Check wiring diagram. Check for added fan motors etc., connected to wrong side of protector.
	Low voltage to unit.	Determine reason and correct.
	Overload protector defective.	Check current, replace protector.
	Run capacitor defective on CSR motor.	Determine reason and replace.
	Excessive discharge pressure.	Clean condenser, check ventilation, check for restrictions in refrigeration system.
	Suction pressure too high.	Check for possibility of misapplication.
	Compressor too hot - insufficient suction gas cooling.	Check refrigerant charge (fix leak), add if necessary. Check return vapour temperature and suction superheat.
	Compressor motor has a winding shorted.	Replace compressor.
5. Unit runs OK, but short cycles.	Overload protector.	See 4 above.
	Thermostat: requires adjustment or incorrectly positioned.	Adjust or relocate thermostat.
	Incorrect refrigerant charge.	Adjust refrigerant charge.
6. Unit operates long or continuously. Unsatisfactory cabinet temperature.	Short of refrigerant.	Fix leak, add charge.
	Overcharge of refrigerant.	Remove refrigerant to correct charge.
	Thermostat not cooling correctly.	Adjst thermostat (clockwise colder).
	Cooler has excessive load.	Establish load within limits.
	Evaporator coil iced.	Defrost evaporator, check refrigeration.
	Restriction in refrigeration system.	Determine location and clear restriction. Flush with dry nitrogen. Replace component if blockage will not clear.
	Dirty condenser.	Clean condenser. Advise client how to regularly clean condenser.

6.8 Trouble Shooting

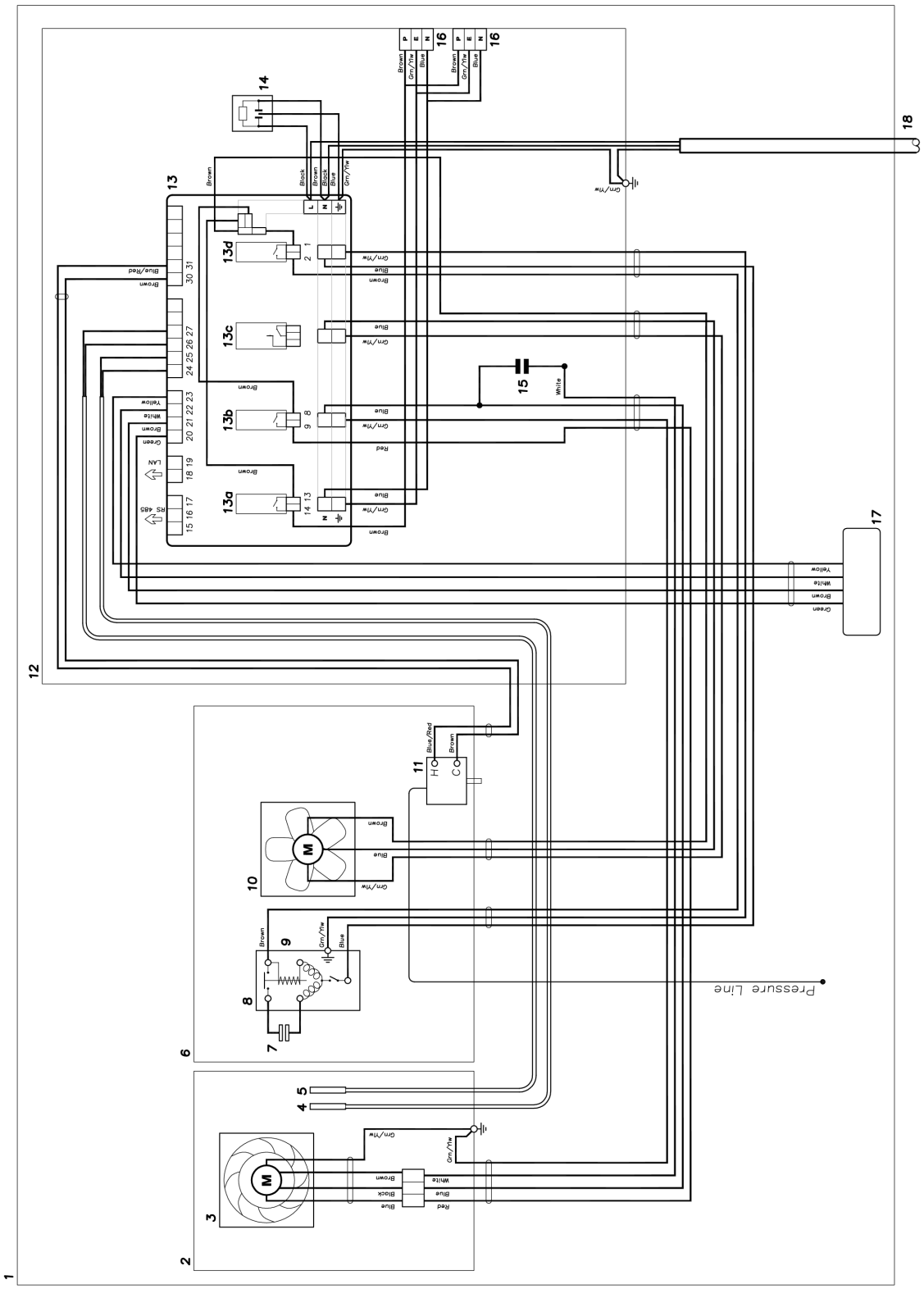
Complaint	Possible Cause	Repair
6. (continued) Unit operates long or continuously. Unsatisfactory cabinet temperature.	Inadequate air circulation.	Internal: Improve air movement, allow airflow around stock. External: Remove any restrictions to condensing ventilation.
	Compressor not pumping efficiently.	Replace compressor.
	Filter dirty (if applicable).	Clean or replace.
	Faulty fan motor.	Check rotation. Replace if necessary.
7. Start capacitor open, shorted or blown.	Relay contacts not opening properly.	Clean contacts or replace relay if necessary.
	Prolonged operation on start cycle due to: (a) Low voltage to unit.	(a) Determine reason and correct.
	(b) Improper relay.	(b) Replace.
	Excessive short cycling.	Determine reason for short cycling (see 5 above), and correct.
	Improper capacitor.	Determine correct size and replace.
8. Relay defective or burned out.	Incorrect relay.	Check and replace.
	Line voltage too high or too low.	Determine reason and correct.
	Excessive short cycling.	Determine reason for short cycling (see 5 above), and correct.
	Relay being influenced by loose vibrating mount.	Remount rigidly.
9. Suction line frosted.	Evaporator fan not running.	Determine reason and correct.
	Overcharge of refrigerant capillary systems.	Correct charge.
10. Unit noisy.	Loose parts or mountings.	Find and tighten.
	Tubing rattle.	Reform to be free of contact.
	Bent fan blade causing vibration.	Replace blade.
	Fan motor bearings worn.	Replace motor.
11. Cabinet surfaces excessively hot.	If operating as standard cooler, cabinet heat may be set on HIGH, as opposed to Low.	Set cabinet heating switch, located on Cabinet Wiring Junction Box, to LOW.
12. Cabinet surfaces excessively cool and sweating.	If operating as freezer cabinet, heating may be set at LOW as opposed to High.	Set cabinet heating switch, located on Cabinet Wiring Junction Box, to HIGH.

6.8 Trouble Shooting

Complaint	Possible Cause	Repair
13. Cabinet not going.	Fuse in Cabinet Wiring Junction Box blown.	Replace fuse.
	Over-pressure cutout at refrigeration unit.	See electronic controller ‘Alarms and Signals’ pp. 29-30.

Notes

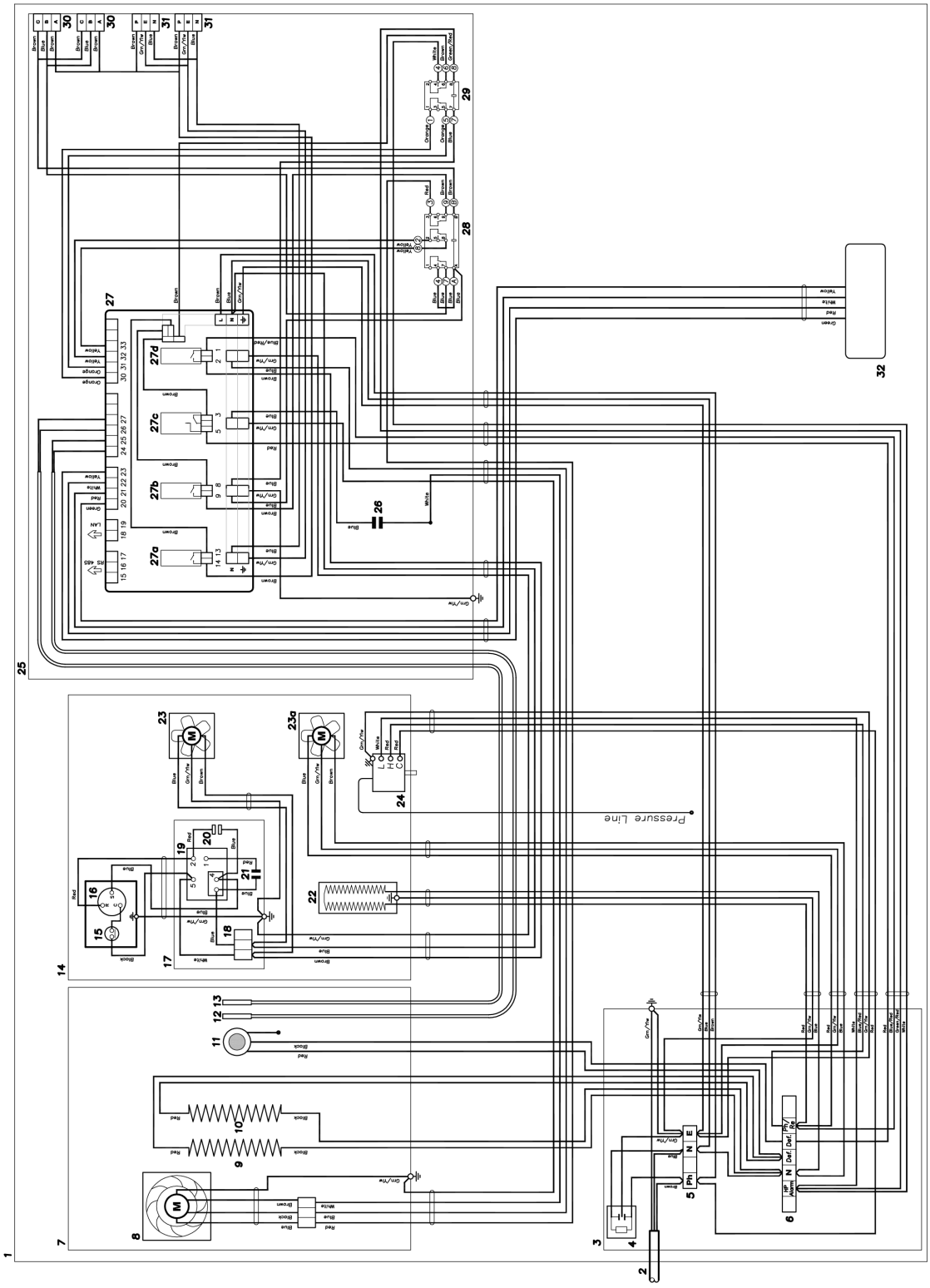
7.1 COOLER Refrigeration Unit: Type 2 Controller



7.1 COOLER Refrigeration Unit: Type 2 Controller

Item	Part Description
1	Refrigeration Unit
2	Evaporator Box
3	Evaporator Fan Assembly
4	Ambient Probe
5	Defrost Probe
6	Condenser Box
7	Start Capacitor
8	Compressor DANFOSS SC15G
9	Start Relay
10	Condenser Fan Assembly
11	High Pressure Switch
12	Control Box Assembly
13	Power Board ELZ0018 (PSB0001000)
13a	Alarm Relay
13b	Fan Relay
13c	Defrost Relay
13d	Compressor Relay
14	R.F.I. Suppression Capacitor
15	Fan Capacitor
16	ENSTO Connector x 2
17	CAREL Processor (type 2) ELZ0017 (PST00SR00)
18	Mains Flex

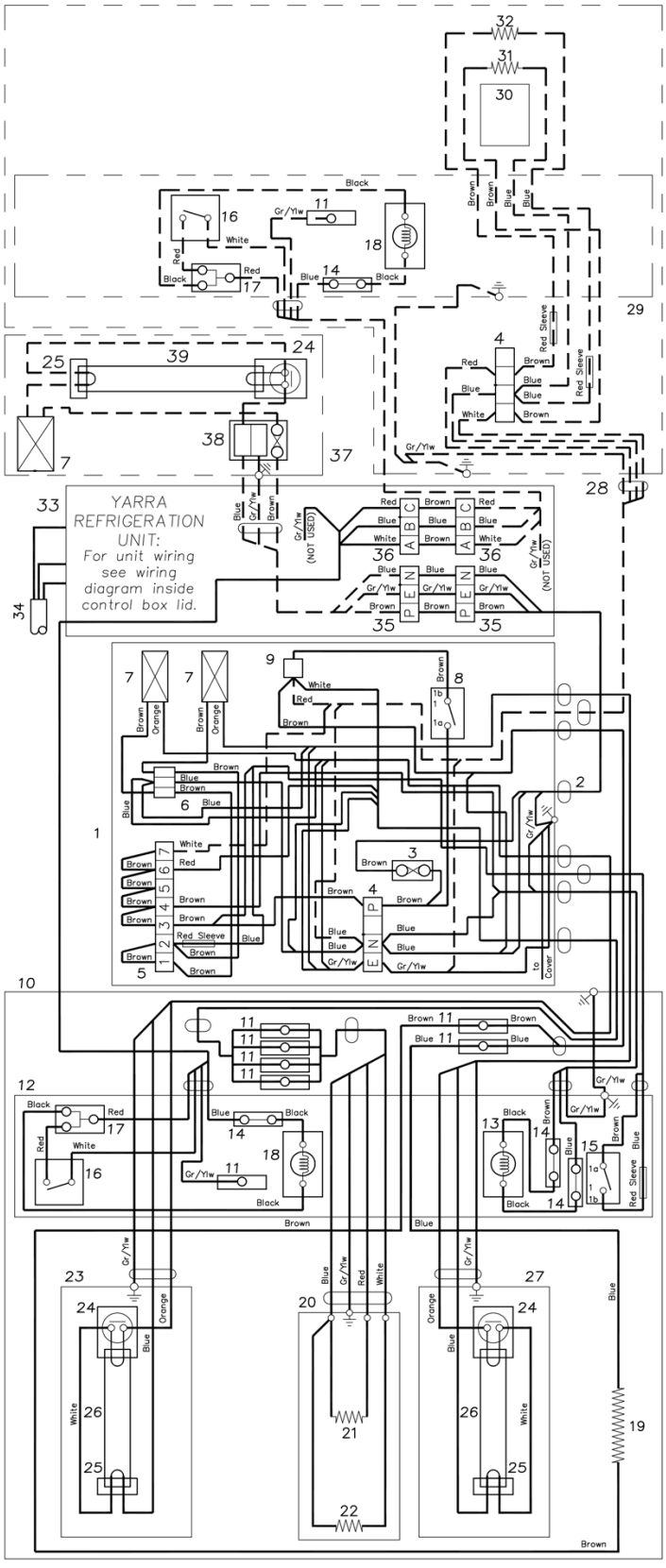
7.2 FREEZER Refrigeration Unit: Type 2 Controller



7.2 FREEZER Refrigeration Unit: Type 2 Controller

Item	Part Description
1	Refrigeration Unit
2	Mains Flex
3	Unit Junction Box
4	R.F.I. Suppression Capacitor
5	4-Way Terminal Block
6	7-Way Terminal Block
7	Evaporator Box
8	Evaporator Fan Assembly
9	Sump Element
10	Defrost Element
11	Defrost Overtemp Safety Switch
12	Ambient Probe
13	Defrost Probe
14	Condenser Box
15	Compressor Overload
16	Compressor KIRBY AKL26ZS
17	Compressor Relay Box
18	3-Way Connector
19	Start Relay
20	Run Capacitor (silver body)
21	Start Capacitor (black body)
22	Drain Tube Element
23	Condenser Fan - R/H (cycles with compressor)
23a	Condenser Fan - L/H (continuous running)
24	High Pressure Switch
25	Control Box Assembly
26	Fan Capacitor
27	Power Board ELZ0018 (PSB0001000)
27a	Alarm Relay
27b	Fan Relay
27c	Defrost Relay
27d	Compressor Relay
28	Fan / Door Control Relay
29	High Pressure Latching Relay
30	ENSTO Connector (blue) x 2
31	ENSTO Connector (white) x 2
32	CAREL Processor (Type 2) ELZ0017 (PST00SR300)

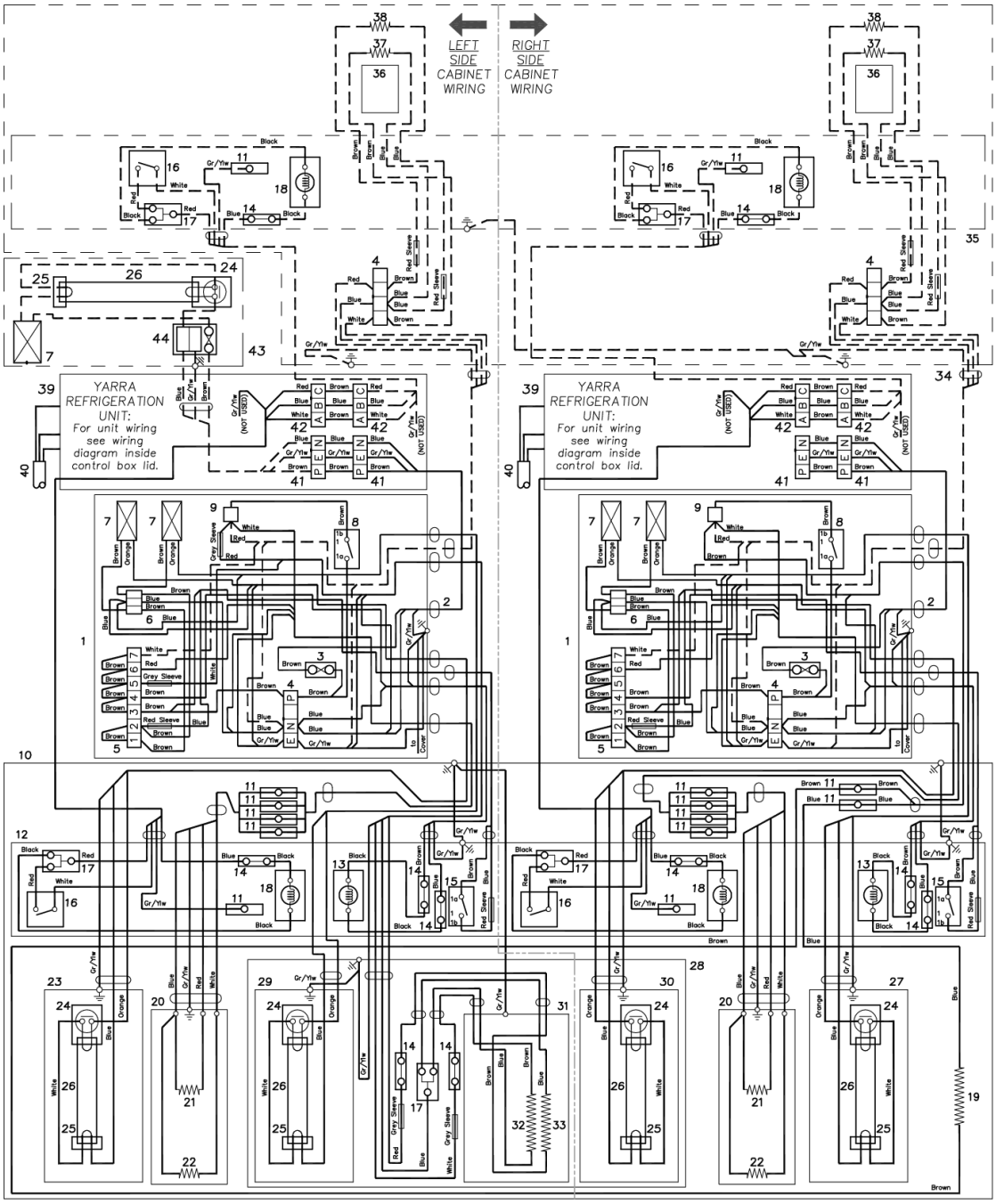
7.3 YARRA 850i: One Door Cabinet



7.3 YARRA 850i: One Door Cabinet

Item	Part Description
1	Yarra Refrigeration Cabinet Wiring Junction Box Assembly
2	Cabinet Wiring Junction Box Power Supply Flex
3	Single Pole Fused Connector Block (with spare fuse)
4	4-Pole Terminal Block (2)
5	7-Pole Terminal Block
6	3-Pole Connector Block
7	58/65 Watt Fluorescent Lighting Ballast (3)
8	Refrigeration Cabinet Heating Switch (LOW/HIGH)
9	1-Pole Terminal Block
10	Yarra Refrigeration Cabinet Front Assembly
11	Inline Insulator (8)
12	Control Panel Assembly
13	Cabinet Power Supply Neon (Indicator Light)
14	2-Way Insulated Connector (4)
15	Fluorescent Lighting Switch (ON/OFF)
16	Door Activated Refrigeration Unit Fans Control Switch (2)
17	3-Way Insulated Connector (2)
18	Refrigeration Unit Fans Power OFF Warning Neon (Indicator Light) (2)
19	Cabinet Facia Door Entrance Perimeter Heater Wire
20	Heated Front Door Assembly
21	Front Door Glass Heated Film
22	Front Door Frame Heater Wire
23	Left Cabinet Fluorescent Side Light Assembly
24	Lamp and Starter Holder with Starter (3)
25	Lamp Holder (3)
26	58 Watt Fluorescent Lighting Tube (2)
27	Right Cabinet Fluorescent Side Light Assembly
28	Yarra Refrigeration Cabinet Rear Assembly (option)
29	Cabinet Rear Wiring Cover Assembly
30	Cabinet Rear Door Entrance
31	Rear Door Entrance Perimeter Cabinet Facia ‘Primary’ Heater Wire
32	Rear Door Entrance Perimeter Cabinet Facia ‘Booster’ Heater Wire
33	Yarra Refrigeration Unit (see wiring diagram inside unit control box lid)
34	Refrigeration Unit Power Supply Flex
35	White Ensto Power Supply Socket (on unit control box) (2)
36	Blue Ensto 3-Pole Socket (on freezer unit control box only. Not on cooler) (2)
37	Lighted Sign Box (option)
38	3-Pole Fused Terminal Block with 3A Fuse plus Spare Fuse
39	18 Watt Fluorescent Lighting Tube

7.4 YARRA 1700i: Two Door Cabinet



7.4 YARRA 1700i: Two Door Cabinet

Item	Part Description
1	Yarra Refrigeration Cabinet Wiring Junction Box Assembly (2)
2	Cabinet Wiring Junction Box Power Supply Flex (2)
3	Single Pole Fused Connector Block (with spare fuse) (2)
4	4-Pole Terminal Block (4)
5	7-Pole Terminal Block (2)
6	3-Pole Connector Block (2)
7	58/65 Watt Fluorescent Lighting Ballast (5)
8	Refrigeration Cabinet Heating Switch (LOW/HIGH) (2)
9	1-Pole Terminal Block (2)
10	Yarra Refrigeration Cabinet Front Assembly
11	Inline Insulator (14)
12	Control Panel Assembly
13	Cabinet Power Supply Neon (Indicator Light) (2)
14	2-Way Insulated Connector (10)
15	Fluorescent Lighting Switch (ON/OFF) (2)
16	Door Activated Refrigeration Unit Fans Control Switch (4)
17	3-Way Insulated Connector (5)
18	Refrigeration Unit Fans Power OFF Warning Neon (Indicator Light) (4)
19	Cabinet Facia Door Entrance Perimeter Heater Wire
20	Heated Front Door Assembly (2)
21	Front Door Glass Heated Film (2)
22	Front Door Frame Heater Wire (2)
23	Left Cabinet Fluorescent Side Light Assembly
24	Lamp and Starter Holder with Starter (5)
25	Lamp Holder (5)
26	58 Watt Fluorescent Lighting Tube (5)
27	Right Cabinet Fluorescent Side Light Assembly
28	Cabinet Front Lighted Centre Pillar Assembly
29	Centre Pillar Left Side Fluorescent Light Assembly
30	Centre Pillar Right Side Fluorescent Light Assembly
31	Centre Pillar Cover Assembly
32	Centre Pillar Cover Facia ‘Primary’ Heater Wire
33	Centre Pillar Cover Facia ‘Booster’ Heater Wire
34	Yarra Refrigeration Cabinet Rear Assembly (option)
35	Cabinet Rear Wiring Cover Assembly
36	Cabinet Rear Door Entrance (2)
37	Rear Door Entrance Perimeter Cabinet Facia ‘Primary’ Heater Wire (2)
38	Rear Door Entrance Perimeter Cabinet Facia ‘Booster’ Heater Wire (2)
39	Yarra Refrigeration Unit (see wiring diagram inside unit control box lid) (2)
40	Refrigeration Unit Power Supply Flex (2)
41	White Ensto Power Supply Socket (on unit control box) (4)
42	Blue Ensto 3-Pole Socket (on freezer unit control box only. Not on cooler) (4)
43	Lighted Sign Box (option)
44	3-Pole Fused Terminal Block with 3A Fuse plus Spare Fuse

8.1 Cabinet Assembly

Part Description	YA850i	YA1700i
CABINET		
Control Panel Assembly	Y1100/797	Y1200/797
Top Hinge Blank (R/H)	V5301/390A	V5301/390A
Top Hinge Assembly (L/H)	n.a.	C1200/389
Top Hinge Assembly (L/H)	V5301/389	V5301/389
Top Hinge Blanking Bracket	n.a.	C1200/390A
Door Adjuster Assembly	A1100/A42-49 (1)	A1100/A42-49 (2)
Door Bottom Hinge Shim	V5000/115B	V5000/115B
Bottom Hinge (R/H)	A1100/393-49	A1100/393-49
Bottom Hinge (L/H)	A1100/394-49	A1100/394-49
Wire Shelf	Y1100/162	A1301/163
Adjustable Shelf Bracket (R/H)	R1101/598L	R1101/598L
Adjustable Shelf Bracket (L/H)	R1101/598R	R1101/598R
Cabinet Wiring Junction Box Ass'y	Y1100/G29 (1)	Y1100/G29 (2)
SKOPE Name Badge	NAM8016-GY/SV	NAM8016-GY/SV
Neon/Switch Encapsulated Label	LAB0088	LAB0088
Swivel Castor - Mounting Plate	SXX6180 (4)	SXX6180 (6)
Adjustable Swivel Castor - Standard	SXX6181 (2)	SXX6181 (3)
Adjustable Swivel Castor - Locking	SXX6182 (2)	SXX6182 (3)
Adjustable Stability Foot	Y1100/314-49 (4)	Y1100/314-49 (6)
REAR DOOR CABINET		
Solid Door Bottom Hinge (R/H)	V5000/D55R	V5000/D55R
Solid Door Bottom Hinge (L/H)	V5000/D55L	V5000/D55L
Solid Door Top Hinge (R/H)	V7000/110	V7000/110
Solid Door Top Hinge (L/H)	V7000/111	V7000/111
Solid Door Top Hinge (Blank)	V7000/112	V7000/112
Rear Door Wiring Cover Assembly	Y1101/F79	Y1201/F79
CABINET WIRING JUNCTION BOX		
Cabinet Wiring Junction Box Ass'y	Y1100/G29	Y1100/G29
58/65 Watt Ballast (2)	ELZ8103	ELZ8103
Rocker Switch	ELS7513	ELS7513
3 Amp Ceramic Fuse	ELZ9654	ELZ9654
Fused Terminal Block	ELZ9655	ELZ9655
Cabinet Wiring Diagram Label	LAB0051	LAB0052

When ordering spare parts: please specify colour (white, black etc.), finish (anodised or painted), and sign panel artwork (if applicable).

8.1 Cabinet Assembly

Part Description	YA850i	YA1700i
GLASS DOOR		
Glass Door Assembly (R/H)	Y2100/740R	Y2100/740R
Glass Door Assembly (L/H)	Y2100/740L	Y2100/740L
Glass Door Gasket	GKT9653N	GKT9653N
Door Adjuster Assembly	A1100/A42-49	A1100/A42-49
Torsion Bar	REF0092	REF0092
Capstan	TUR7635	TUR7635
Bush	PLM5075 (2)	PLM5075 (2)
SOLID DOOR		
Solid Door Assembly (R/H)	Y6500/D40	Y6500/D40
Solid Door Assembly (L/H)	Y6500/D41	Y6500/D41
Solid Door Gasket	GKT9653N	GKT9653N
Plastic Handle	PLM7823BK	PLM7823BK
Hinge Mechanism	HIN5780	HIN5780
Top Mount Bush	C1300/D56	C1300/D56
INTERIOR LIGHTS		
Side Light Assembly (R/H)	Y1100/L93R-32	Y1100/L93R-32
Side Light Assembly (L/H)	Y1100/L93L-32	Y1100/L93L-32
Centre Pillar Light Assembly	n.a.	Y1200/L98-32
Centre Pillar Channel Assemly (R/H)	n.a.	Y1200/L95R-32
Centre Pillar Channel Assemly (L/H)	n.a.	Y1200/L95L-32
Light Diffuser	Y1100/E71	Y1100/E71
58 Watt Fluorescent Tube (5ft):		
L58W/21-840 4000K ‘Coolwhite’	ELL6267	ELL6267
L58W/11-860 6000K ‘Daylight’	ELL9390	ELL9390
Starter	ELZ2840	ELZ2840
Lamp Holder	ELZ6270	ELZ6270
Starter Holder	ELZ6271	ELZ6271

8.2 Optional Parts

Part Description	YA850i	YA1700i
PELMET		
Pelmet Hinged Front Panel	Y1100/R69	Y1200/R69
Slotted Hinged Front Panel	Y1100/R72	Y1200/R72
Pelmet Support Frame	Y1100/R85	Y1100/R85
SHELVING		
Shelf Frame	Y1100/162-99	A1301/163-99
Shelf Divider	SXX9037	SXX9037
Moulded Product Riser	PLM9191-0646	PLM9191-0680
Aluminium Ticket Strip	ALX9890WH-0654	ALX9890WH-0688
‘Speedfeed’ Matts - 165mm	SXX9035WH-0510	SXX9035WH-0510
‘Speedfeed’ Matts - 80mm		SXX9036WH-0510

8.3 COOLER Refrigeration Unit

Part Description			SKOPE P/No.
COOLER UNIT			
Refrigeration Unit Assembly			YC1120R-128Z2
Unit Junction Box Assembly			YC1100/R86
Control Box Assembly			YC1100/E50X2
Condenser Motor Assembly			YC1100/501
Suction Line Assembly			YC1100/378
Compressor DANFOSS SC15G			CPR7344P
Evaporator Coil			CLS8839
Condenser Coil			CLS8841
Start Capacitor			ELC2369NC
Relay			ELC2367NC
High Pressure Switch			ELS8505
Chest Handle			HAN0000
Drier - Production			DRY8783
Drier - Service			DRY6110
Condenser Fan Blade			FAN4100
Evaporator Fan Assembly			YC2100/484Z
Condenser Fan Motor			YC1100/404B
Evaporator Fan Capacitor			YC2100/X27
R.F.I. Suppression Capacitor			ELC8068
Unit Wiring Diagram Label (Type 1 Controller)			LAB0054
Unit Wiring Diagram Label (Type 2 Controller)			LAB0056
FREEZER CONTROLLER	**Type**	**Model No.**	**SKOPE P/No.**
Electronic Controller Display	1	IR32POLBRO	ELZ9790
Probe x 2		NTCO15WP00	ELZ7644
Electronic Controller Display	2	PST00300	ELZ0017
Controller Power Board		PSB0001000	ELZ0018
Controller Connector Cable		PSTCON0300	ELZ0019
Probe x 2		NTC015WP00	ELZ7644

8.4 FREEZER Refrigeration Unit

Part Description			SKOPE P/No.
FREEZER UNIT			
Refrigeration Unit Assembly			YC2197R-130X2
Unit Junction Box Assembly			YC2100/R86
Control Box Assembly			YC2100/E50X2
Condenser Motor Assembly			YC2100/501
Compressor KIRBY AKL26ZS			CPR9027P
Evaporator Coil			CLS9681
Condenser Coil			CLS8841
Compressor Overload			ELS9288NC
Run Capacitor			ELC9283NC
Start Capacitor			ELC9282NC
Relay			ELC9281NC
High Pressure Switch			ELS7058
Chest Handle			HAN0000
Drier - Production			DRY6110
Drier - Service			DRY6110
Sump Element			ELE8850
Defrost Element			ELE8851
Drain Element			YC2100/E85
Condenser Fan Blade			FAN4100
Evaporator Fan Assembly			YC2100/484Z
Condenser Fan Motor - left hand			YC1100/404B
Condenser Fan Motor - right hand			YC2100/404B
Evaporator Fan Capacitor			YC2100/X27
R.F.I. Suppression Capacitor			ELC8068
Unit Wiring Diagram Label (Type 1 Controller)			LAB0053
Unit Wiring Diagram Label (Type 2 Controller)			LAB0055
FREEZER CONTROLLER	**Type**	**Model No.**	**SKOPE P/No.**
Electronic Controller Display	1	IR32POLBRO	ELZ7641
Controller Relay Module		S90RDPW400	ELZ9308
Probe x 2		NTCO15WP00	ELZ7644
Controller Connector Cable		S90CONN001	ELZ7643
Electronic Controller Display	2	PST00300	ELZ0017
Controller Power Board		PSB0001000	ELZ0018
Controller Connector Cable		PSTCON0300	ELZ0019
Probe x 2		NTC015WP00	ELZ7644